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Alfalfa Variety Trial Results Archive

Vance Owens

South Dakota State University

R. Bortnem

South Dakota State University

D. Gustafson

E. Omdahl


South Dakota State University

Chris Lee

South Dakota State University

See next page for additional authors

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Authors

Vance Owens, R. Bortnem, D. Gustafson, E. Omdahl, Chris Lee, Peter Jeranyama, Matt Hansen, and Karla Hernandez

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm

Planted 25 April 1997, RCB with 6 replicates

Entry	1999					1998	2-year	1999
	27 May	7 July	5 Aug.	1 Oct.	Total	Total	Total	7 July
	Tons dry matter/acre					PLH rating ^a		
Released Cultivars								
Ciba 2444	2.30	1.51	1.76	0.78	6.35	8.89	15.24	2.0
Pioneer Brand 5454	2.25	1.38	1.89	0.72	6.25	8.52	14.77	2.3
Amerigraze 401+Z	2.21	1.37	1.82	0.82	6.21	8.77	14.98	2.0
ICI 631	2.18	1.37	1.89	0.77	6.20	8.56	14.76	2.3
Avalanche +Z	2.17	1.43	1.82	0.78	6.20	8.65	14.85	2.2
Depend +Ev	2.12	1.40	1.83	0.84	6.20	8.75	14.95	2.0
TMF Multiplier II	2.66	1.20	1.63	0.69	6.18	8.75	14.93	3.2
WL 325HQ	2.25	1.31	1.76	0.83	6.16	8.98	15.14	2.7
DK 140	2.19	1.32	1.85	0.69	6.06	8.82	14.88	2.0
Asset	2.13	1.37	1.78	0.79	6.06	8.89	14.95	2.7
Pioneer Brand 5312	2.13	1.32	1.88	0.71	6.03	9.19	15.22	2.7
Excalibur II	2.13	1.26	1.80	0.80	6.00	9.06	15.06	2.3
Ciba 2888	2.15	1.27	1.75	0.72	5.89	9.50	15.39	2.8
DK 127	2.25	1.28	1.70	0.64	5.87	8.56	14.43	2.2
WL 324	2.06	1.32	1.69	0.80	5.87	8.70	14.57	2.8
Rhino	1.95	1.32	1.78	0.80	5.83	9.08	14.91	2.8
5347LH	2.00	1.38	1.76	0.69	5.82	9.00	14.82	2.5
Innovator +Z	2.12	1.34	1.72	0.62	5.80	8.36	14.16	2.2
Spartan	2.08	1.30	1.74	0.68	5.80	8.68	14.48	2.7
ICI 620	2.01	1.40	1.70	0.66	5.77	8.70	14.47	2.2
Complete	2.07	1.30	1.70	0.70	5.76	8.46	14.22	2.0
DK 142	2.05	1.28	1.75	0.65	5.73	8.31	14.04	2.5
Rainier	2.08	1.28	1.71	0.66	5.73	8.91	14.64	2.5
Spur	2.06	1.22	1.72	0.73	5.73	8.52	14.25	2.5
Ace	1.99	1.17	1.72	0.70	5.56	8.04	13.60	3.0
Vernal	1.87	1.24	1.61	0.53	5.24	8.12	13.36	2.7
Experimental Strains								
CW 5305	2.23	1.30	1.80	0.80	6.12	9.18	15.30	2.2
CW 5347	2.02	1.32	1.74	0.61	5.69	8.74	14.43	2.5
CW 5321	2.06	1.28	1.66	0.59	5.58	8.29	13.87	2.5
CW 2227	2.04	1.16	1.67	0.58	5.43	8.25	13.68	2.5
CW 5236	2.04	1.17	1.68	0.50	5.39	8.24	13.63	2.7
Mean	2.12	1.31	1.75	0.7	5.88	8.68	14.56	2.5
Maturity (Kalu and Fick)	4.0	5.0	4.1	3.5				
LSD (P=0.05)	0.25	0.13	0.16	NS	0.58	0.63	1.11	0.5
CV (%)	10.4	8.9	8.0	28.0	8.6	6.4	6.7	19.1
MCV (%) ^b	11.8	9.9	9.1		9.9	7.3	7.6	20.0
LSR (%) ^c	31.6	37.1	57.1		52.3	43.2	54.8	41.7

a Potato leafhopper resistance ratings: North American Alfalfa Improvement Conference

1 No apparent injury

2 Very minor stunting and yellowing

3 Moderate stunting, yellowing is evident on 20-40% of leaves

4 Significant injury, plant showing stunting with yellowing on 40-60% of leaves

5 Severe injury, plants with severe stunting, yellowing or reddening evident on 60-100% of

b MCV = (LSD/mean)*100

c LSR = (LSD/range)*100

SOUTH DAKOTA

Aurora, Brookings County, SD Crop Improvement Research Farm

Planted 23 April 1996, RCB with 4 replicates

Entry	1999			1998	1997	1996	3-year	1999
	28 May	8 July	Total	Total	Total	Total	Total	8 July
			Tons dry matter/acre			PLH rating ^a		
Released Cultivars								
GH766	1.63	0.81	2.44	1.33	2.61	1.91	6.38	2.8
Pioneer Brand 5454	1.59	0.73	2.36	1.10	2.54	1.89	5.96	2.3
Stetson II+	1.58	0.69	2.32	1.28	2.53	2.04	6.09	2.3
Complete	1.53	0.76	2.29	1.57	2.75	1.81	6.61	2.8
DK 127	1.47	0.76	2.24	1.25	2.64	1.98	6.12	3.0
Bounty	1.51	0.71	2.22	1.37	2.34	1.80	5.93	2.5
Big Horn	1.44	0.78	2.22	1.38	2.73	1.89	6.32	2.5
Pioneer Brand 5312	1.44	0.76	2.20	1.27	2.74	1.95	6.21	2.8
TMF Multi-plier II	1.55	0.62	2.18	1.35	2.70	1.94	6.22	2.5
Alpha 2001	1.49	0.71	2.17	1.17	2.72	2.10	6.09	2.5
Columbia 2000	1.52	0.62	2.15	1.33	2.75	2.09	6.21	3.0
ICI 645	1.49	0.67	2.13	1.24	2.54	1.80	5.94	2.8
A395	1.54	0.61	2.12	1.42	2.42	1.84	5.98	2.0
WL 325HQ	1.48	0.63	2.11	1.24	2.62	1.99	5.97	2.5
DK 122	1.51	0.62	2.11	1.29	2.74	1.88	6.17	2.8
Depend +EV	1.44	0.59	2.08	1.40	2.70	1.91	6.15	2.3
ABT205	1.52	0.59	2.07	1.19	2.36	1.83	5.65	2.5
Rainier	1.39	0.71	2.07	1.12	2.33	2.08	5.56	2.5
Good as Gold	1.44	0.55	2.04	1.21	2.58	2.00	5.79	3.0
Vernal	1.41	0.60	2.01	1.29	2.33	1.71	5.63	3.0
MAX329	1.38	0.63	2.00	1.38	2.56	1.94	5.94	2.5
AlfaStar	1.30	0.70	2.00	1.43	2.80	1.83	6.22	2.0
Crystal	1.46	0.53	1.99	1.15	2.41	1.96	5.55	2.3
CIBA 2444	1.41	0.61	1.99	1.27	2.32	1.88	5.61	2.0
WL 324	1.40	0.55	1.92	1.20	2.45	1.89	5.59	3.0
Saranac AR	1.32	0.51	1.88	1.07	2.27	1.76	5.18	3.0
Riley	1.31	0.52	1.79	1.20	2.42	1.89	5.44	2.8
Alfaleaf II	1.26	0.51	1.78	1.12	2.23	1.87	5.12	2.5
Baker	1.34	0.31	1.62	1.02	2.09	1.78	4.76	3.0
Experimental Strains								
PGI3212	1.71	0.71	2.43	1.24	2.82	2.01	6.49	2.8
Mean	1.45	0.63	2.09	1.26	2.53	1.91	5.89	2.6
Maturity (Kalu and Fick)	3.5	4.3						
LSD (P=0.05)	0.17	NS	0.35	0.27	0.37	NS	0.7	0.6
CV (%)	8.4	26.4	11.7	15.0	10.8	9.3	8.5	16.6
MCV (%) ^b	11.7		16.8	21.4	14.6		11.9	23.1
LSR (%) ^c	38.0		42.3	48.9	50.2		37.8	60.0

a Potato leafhopper resistance ratings: North American Alfalfa Improvement Conference

1 No apparent injury

2 Very minor stunting and yellowing

3 Moderate stunting, yellowing is evident on 20-40% of leaves

4 Significant injury, plant showing stunting with yellowing on 40-60% of leaves

5 Severe injury, plants with severe stunting, yellowing or reddening evident on 60-100% of

b MCV = (LSD/mean)*100

c LSR = (LSD/range)*100

SOUTH DAKOTA

Aurora, Brookings County, SD Crop Improvement Research Farm
Planted 22 April 1998, RCB with 6 replicates

Entry	1999			1998
	3 June	8 July	Total	Total
	Tons dry matter/acre			
Released Cultivars				
Magnum V	2.25	1.58	3.83	1.13
Geneva	2.20	1.55	3.74	1.20
Winterstar	2.15	1.47	3.62	1.24
Pioneer Brand 53Q60	2.15	1.45	3.60	1.15
Husky Supreme	2.13	1.43	3.55	1.38
Winterking	2.06	1.46	3.52	1.15
Feast +EV	2.09	1.36	3.45	1.21
Rainier	2.09	1.34	3.43	1.19
DK 140	2.13	1.27	3.40	1.22
ABT 350	2.05	1.34	3.39	1.16
Target II Plus	2.06	1.30	3.36	1.15
Pioneer Brand 53V63	2.05	1.31	3.36	1.14
WL 232HQ	2.15	1.17	3.33	1.06
Frontier 2000	2.01	1.27	3.29	1.12
Vernal	2.16	1.11	3.27	1.26
Goldrush 747	2.09	1.18	3.27	1.27
Ace	1.94	1.31	3.25	1.10
TMF 421	2.03	1.18	3.20	1.07
Yielder	1.95	1.13	3.08	1.19
DK 134	1.89	1.10	2.99	1.18
Experimental Strains				
4G70	2.05	1.27	3.31	1.06
Mean	2.08	1.31	3.39	1.17
Maturity (Kalu and Fick)	3.8	4.4		
LSD (P=0.05)	NS	0.29	0.32	NS
CV (%)	8.6	19.1	8.2	14.0
MCV (%) ^a		22.1	9.4	
LSR (%) ^b		60.0	37.9	

a MCV = (LSD/mean)*100

b LSR = (LSD/range)*100

SOUTH DAKOTA

Highmore, Hyde County, Central Crops and Soils Research Station
Planted 5 May 1998, RCB with 6 replicates

Entry	1999				
	26 May	6 July	3 Aug.	Total	6 July
	Tons dry matter/acre			PLH rating ^a	
Released Cultivars					
MagnumV	1.83	1.61	0.87	4.31	2.3
WL 324	1.81	1.55	0.88	4.24	1.7
TMF 421	1.75	1.60	0.83	4.18	1.8
Husky Supreme	1.69	1.62	0.87	4.17	2.0
Vernal	1.81	1.56	0.77	4.13	2.5
ICI 620	1.75	1.54	0.81	4.11	1.2
WL 325HQ	1.67	1.54	0.89	4.09	2.3
Pioneer Brand 53Q60	1.68	1.54	0.86	4.07	1.8
DK140	1.76	1.52	0.79	4.07	2.0
WL 232HQ	1.68	1.50	0.81	3.98	2.3
Goldrush 747	1.65	1.50	0.81	3.95	2.5
TMF Multiplier II	1.61	1.48	0.75	3.83	2.2
Pioneer Brand 53V63	1.54	1.55	0.75	3.83	1.2
DK 134	1.62	1.46	0.74	3.82	2.0
Frontier 2000	1.42	1.44	0.71	3.56	2.5
Experimental Strains					
CW 72008	1.85	1.52	0.81	4.18	1.5
CW 72005	1.76	1.55	0.82	4.13	2.2
CW 5236	1.75	1.55	0.78	4.08	2.3
CW 5321	1.60	1.51	0.78	3.89	1.7
Mean	1.69	1.53	0.81	4.03	2.0
Maturity (Kalu and Fick	2.9	5.5	5		
LSD (P=0.05)	0.15	NS	NS	0.37	0.6
CV (%)	7.6	8.5	16.2	8.0	24.9
MCV (%) ^b	8.9			9.2	30.0
LSR (%) ^c	34.9			49.4	45.0

^a Potato leafhopper resistance ratings: North American Alfalfa Improvement Conference

- 1 No apparent injury
- 2 Very minor stunting and yellowing
- 3 Moderate stunting, yellowing is evident on 20-40% of leaves
- 4 Significant injury, plant showing stunting with yellowing on 40-60% of leaves
- 5 Severe injury, plants with severe stunting, yellowing or reddening evident on 60-100% of

^b MCV = (LSD/mean)*100

^c LSR = (LSD/range)*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station
Planted 22 May 1996, RCB with 4 replicates

Entry	1999				1998	1997	1996	3-year
	1 June	14 July	16 Aug.	Total	Total	Total	Total	Total
Tons dry matter/acre								
Released Cultivars								
Bounty	2.17	2.16	0.83	5.15	5.85	4.00	0.97	15.01
Alfastar	2.18	2.14	0.82	5.13	6.31	4.26	1.06	15.71
WL 325HQ	2.25	1.94	0.80	4.98	5.49	4.55	1.08	15.02
Viking I	2.24	1.91	0.81	4.96	5.99	4.33	0.85	15.28
DK 127	1.96	2.00	0.96	4.92	6.10	4.55	1.07	15.57
Ciba 2444	2.08	1.92	0.84	4.84	5.55	4.86	0.95	15.25
ICI 631	2.06	1.90	0.82	4.78	5.93	4.46	1.06	15.16
HayGrazer	2.08	1.89	0.80	4.76	5.76	4.48	0.95	14.99
WL 324	1.97	1.96	0.84	4.75	6.14	4.78	1.09	15.68
Pioneer Brand 5454	2.01	1.92	0.81	4.74	5.90	4.56	0.97	15.20
Pioneer Brand 5312	1.91	1.90	0.86	4.66	5.94	4.42	0.84	15.03
Columbia 2000	1.98	1.86	0.82	4.66	5.66	4.91	0.92	15.23
BigHorn	1.95	1.87	0.76	4.57	5.69	3.96	0.80	14.21
DK 122	1.93	1.82	0.78	4.54	5.79	4.09	0.98	14.42
Riley	1.84	1.91	0.79	4.54	5.73	3.95	0.92	14.22
A-395	1.97	1.87	0.67	4.50	5.64	4.57	1.11	14.70
ICI 620	1.96	1.82	0.72	4.50	5.31	3.91	0.95	13.72
TMF Multiplier II	1.89	1.74	0.79	4.42	5.63	4.26	0.91	14.31
Rainier	1.78	1.76	0.84	4.38	5.33	3.91	1.00	13.62
WL 252HQ	1.77	1.83	0.72	4.32	5.53	4.22	0.89	14.07
Saranac AR	1.94	1.65	0.71	4.29	6.01	4.38	1.05	14.69
Vernal	1.77	1.79	0.70	4.26	5.35	4.15	0.98	13.75
Baker	1.85	1.72	0.69	4.25	5.24	4.16	0.77	13.65
Defiant	1.76	1.81	0.69	4.25	5.61	4.22	1.05	14.08
LegenDairy 2.0	1.75	1.75	0.74	4.24	5.49	4.09	1.04	13.82
ABT 205	1.80	1.75	0.63	4.17	5.37	4.14	0.96	13.68
Travois	1.66	1.44	0.50	3.60	4.40	3.37	0.80	11.38
Experimental Strains								
SDFB	1.73	1.65	0.78	4.16	5.62	4.59	1.07	14.37
Mean	1.94	1.84	0.77	4.55	5.65	4.29	0.96	14.49
Maturity (Kalu and Fick)	3.5	4.2	4				3.5	
LSD (P=0.05)	NS	NS	0.17	0.74	0.77	0.63	NS	1.52
CV (%)	16.1	12.6	15.9	11.6	9.6	10.4	18.9	7.5
MCV (%) ^a			22.1	16.3	13.6	14.7		10.5
LSR (%) ^b			37.2	47.7	40.3	40.9		35.1

a MCV = (LSD/mean)*100

b LSR = (LSD/range)*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station

Planted 23 April 1999, RCB with 6 replicates

Entry	1999			
	14 July	16 Aug.	Total	16 Aug.
	Tons dry matter/acre		PLH rating ^a	
Released Cultivars				
Garst 645-11	2.69	1.04	3.72	2.2
Alfastar	2.64	0.97	3.61	2.2
Spirit	2.58	1.03	3.61	2.7
Garst 620	2.73	0.85	3.57	1.8
FQ 314	2.57	0.94	3.51	2.3
Abound	2.54	0.95	3.50	2.5
ABT 350	2.50	1.00	3.50	2.3
Garst 6410	2.50	0.99	3.49	2.2
Rebound 4.2	2.49	0.97	3.46	2.7
Award	2.61	0.85	3.45	2.5
Pioneer Brand 53Q60	2.44	0.99	3.44	2.8
FQ 315	2.55	0.87	3.42	2.5
GH 766	2.47	0.94	3.41	2.2
Macon	2.47	0.94	3.41	2.2
WinterStar	2.49	0.90	3.40	2.0
Legend Gold	2.56	0.84	3.40	1.8
Excalibur II	2.52	0.86	3.38	2.0
WL 232HQ	2.43	0.94	3.37	2.7
WinterKing	2.49	0.88	3.37	1.7
A-395	2.42	0.90	3.32	2.0
DK 124	2.45	0.86	3.32	2.5
DK 134	2.46	0.84	3.30	2.7
Pioneer Brand 54V54	2.39	0.86	3.25	2.2
Garst 6420	2.30	0.94	3.24	2.8
Sprint	2.40	0.84	3.23	1.8
DK 140	2.32	0.88	3.19	2.3
TMF 421	2.44	0.73	3.17	2.2
Vernal	2.28	0.83	3.12	3.7
Mean	2.49	0.91	3.40	2.3
Maturity (Kalu and Fick)	5.6	3.4		
LSD (P=0.05)	0.23	0.16	NS	0.7
CV (%)	8.0	15.1	8.5	26.6
MCV (%) ^b	9.2	17.6		30.4
LSR (%) ^c	51.9	52.2		35.0

^a Potato leafhopper resistance ratings: North American Alfalfa Improvement Conference

1 No apparent injury

2 Very minor stunting and yellowing

3 Moderate stunting, yellowing is evident on 20-40% of leaves

4 Significant injury, plant showing stunting with yellowing on 40-60% of leaves

5 Severe injury, plants with severe stunting, yellowing or reddening evident on 60-100% of leaves

^b MCV = (LSD/mean)*100

^c LSR = (LSD/range)*100

South Dakota Alfalfa Variety Trials
V.N. Owens, R.R. Bortnem, and D. Gustafson

Establishment and Management

Traditionally, alfalfa plots have been planted at a rate of 15 lbs PLS acre⁻¹ using a five row planter with 6-in spacings.. The new trial sown at Watertown in 1999 was planted with a Brillion type seeder at a seeding rate of 20 lbs PLS acre⁻¹. Plots are 3 or 4 feet wide and 25 feet in length. Stage of maturity for each trial was determined using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count scheme before harvesting each trial. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during the harvest, microwave-dried on site, and percent moisture calculated to determine dry matter yields. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example, 'Highmore1998' is the trial planted at Highmore in 1998.

2000 Results

Yields for each location are listed in tons dry matter /acre. Release cultivars are listed first followed by experimental entries.

New trials were successfully established at Brookings and Beresford. Good growing conditions at Beresford allowed two cuttings to be taken from that site, however, only one cutting was taken from the new seeding at Brookings due to drought. The new site at Beresford was sprayed for potato leafhopper infestation during the season. Potato leafhopper resistance ratings were taken on the new stand prior to herbicide application.

Early season precipitation permitted us to obtain excellent first cut yields at all sites. Mid- to late-season drought occurred at Brookings and Highmore resulting in very slow regrowth. As a result, only two cuttings were harvested at these locations.

Alfalfa conditions were good at Beresford and Watertown, allowing three to four cuttings.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605 688-4754

FAX: 605 688-4602

email: owens.vance@ces.sdstate.edu

mailing address: Plant Science Department

South Dakota State University

Box 2207A

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm

Planted 25 April 1997, RCB with 6 replicates

Entry	2000					1999	1998	3-yr.
	24-May	1-Jul	28-Jul	30-Aug	Total	Total	Total	Total
	Tons Dry Matter/Acre							
Released cultivars								
Ciba 2888	1.39	1.20	1.55	0.61	4.74	5.89	9.50	20.13
Pioneer Brand 5312	1.40	1.15	1.55	0.61	4.71	6.03	9.19	19.93
WL 325HQ	1.37	1.24	1.48	0.67	4.76	6.16	8.98	19.89
Ciba 2444	1.34	1.22	1.44	0.57	4.57	6.35	8.89	19.80
Depend +Ev	1.34	1.17	1.58	0.61	4.69	6.20	8.75	19.64
Excalibur II	1.29	1.19	1.50	0.60	4.58	6.00	9.06	19.64
Rhino	1.31	1.18	1.54	0.68	4.71	5.83	9.08	19.62
Amerigraze 401+Z	1.40	1.14	1.43	0.60	4.57	6.21	8.77	19.54
Asset	1.32	1.14	1.52	0.60	4.58	6.06	8.89	19.53
TMF Multiplier II	1.31	1.16	1.40	0.61	4.48	6.18	8.75	19.41
DK140	1.22	1.18	1.47	0.54	4.41	6.06	8.82	19.29
Avalanche +Z	1.26	1.13	1.44	0.56	4.39	6.20	8.65	19.24
Garst 631	1.23	1.12	1.54	0.56	4.45	6.20	8.56	19.21
Pioneer Brand 5454	1.30	1.12	1.42	0.55	4.38	6.25	8.52	19.16
Pioneer Brand 5347LH	1.23	1.09	1.48	0.53	4.33	5.82	9.00	19.15
Garst 620	1.29	1.16	1.52	0.63	4.60	5.77	8.70	19.07
WL 324	1.33	1.14	1.39	0.63	4.48	5.87	8.70	19.05
Rainier	1.22	1.15	1.48	0.52	4.37	5.73	8.91	19.01
Spartan	1.24	1.11	1.45	0.53	4.33	5.80	8.69	18.81
DK142	1.24	1.23	1.53	0.63	4.63	5.73	8.31	18.67
DK127	1.12	1.13	1.41	0.55	4.20	5.87	8.56	18.63
Spur	1.08	1.12	1.52	0.60	4.32	5.73	8.52	18.57
Complete	1.29	1.03	1.49	0.55	4.35	5.76	8.46	18.57
Innovator +Z	1.24	1.07	1.43	0.52	4.26	5.80	8.36	18.42
Ace	1.12	1.08	1.45	0.60	4.26	5.56	8.04	17.86
Vernal	1.06	1.00	1.44	0.59	4.09	5.24	8.12	17.45
Experimental strains								
CW 5305	1.31	1.19	1.57	0.63	4.69	6.12	9.19	19.99
CW 5347	1.21	1.23	1.56	0.60	4.61	5.69	8.74	19.04
CW 5321	1.20	1.13	1.47	0.56	4.36	5.58	8.30	18.23
CW 2227	1.33	1.11	1.45	0.53	4.41	5.43	8.26	18.10
CW 5236	1.03	1.07	1.35	0.54	3.82	5.39	8.24	17.45
Mean	1.26	1.14	1.48	0.58	4.46	5.89	8.69	19.04
Maturity (Kalu and Fick)	4.2	5.5	5.1	5.0				
LSD (P=0.05)	0.20	0.11	NS	NS	0.49	0.58	0.63	1.45
CV (%)	14.2	8.7	13.1	15.2	9.7	8.6	6.4	6.7
MCV (%)	16.2	10.0			11.1	9.8	7.3	7.6
LSR (%)	55.5	47.8			52.6	52.0	43.4	54.0

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm
Planted 28 April 2000, RCB with 6 replicates

Entry	2000			PLH-rat.
	29-Jul	30-Aug	TOTAL	30-Aug
	Tons Dry Matter/Acre			
Released cultivars				
Shaw	2.96	0.92	3.88	2.5
645-II	2.87	0.98	3.85	2.3
Garst 6420	2.80	0.99	3.79	2.7
Gold Rush 747	2.80	0.98	3.78	2.5
Husky Supreme	2.83	0.94	3.77	2.3
GH 750	2.72	0.98	3.70	2.7
Frontier 2000	2.67	0.94	3.61	2.2
Garst 6410	2.66	0.93	3.59	3.0
Excel	2.64	0.93	3.57	3.3
Pioneer Brand 53H81	2.61	0.87	3.48	1.8
Maverick	2.53	0.90	3.43	2.5
Multiplier 3	2.55	0.84	3.39	3.2
Vernal	2.37	0.98	3.35	1.8
Pioneer Brand 53V08	2.44	0.86	3.30	2.7
Legend Gold	2.20	0.94	3.14	2.5
Experimental strains				
MT 9503	2.82	0.98	3.80	2.0
CW 94008	2.80	0.94	3.74	2.8
CW 64049	2.62	0.93	3.55	3.0
CW 64026	2.56	0.96	3.51	2.5
CW 54033	2.60	0.89	3.50	3.3
CW 64004	2.46	0.95	3.41	2.8
CW 74040	2.47	0.90	3.37	3.3
ZG 9840	2.41	0.94	3.36	1.5
CW 73029	2.46	0.85	3.30	3.2
CW 75044	2.39	0.91	3.29	3.2
Mean	2.61	0.93	3.54	2.6
Maturity (Kalu & Fick)	5.7	3.5		
LSD (P=0.05)	0.40	NS	0.43	0.8
CV (%)	13.4	9.2	10.5	25.2
MCV (%)	15.3		12.0	28.8
LSR (%)	52.8		57.7	41.2

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Brookings, Brookings County, SD Crop Improvement Research Farm

Planted 22 April 1998, RCB with 6 replicates

Entries	2000			1999	1998	3-yr
	24-May	8-Jul	Total	Total	Total	Total
Tons Dry Matter/Acre						
Released cultivars						
Magnum V	0.76	0.70	1.46	3.83	1.12	6.41
Geneva	0.75	0.71	1.46	3.74	1.20	6.40
Husky Supreme	0.73	0.62	1.34	3.55	1.38	6.27
WinterStar	0.68	0.58	1.26	3.62	1.24	6.12
WinterKing	0.73	0.60	1.33	3.52	1.15	6.00
Rainier	0.72	0.60	1.32	3.43	1.19	5.94
ABT 350	0.75	0.62	1.37	3.39	1.16	5.92
Feast +EV	0.64	0.52	1.16	3.45	1.21	5.81
DK140	0.69	0.50	1.19	3.40	1.22	5.81
Vernal	0.62	0.64	1.27	3.27	1.26	5.80
Target II Plus	0.67	0.55	1.22	3.36	1.15	5.73
Pioneer Brand 53Q60	0.63	0.55	1.18	3.51	1.04	5.73
Frontier 2000	0.68	0.64	1.32	3.29	1.12	5.72
Goldrush 747	0.64	0.54	1.18	3.27	1.27	5.72
Pioneer Brand 53V63	0.66	0.52	1.18	3.36	1.14	5.68
Yielder	0.75	0.59	1.34	3.08	1.19	5.61
Ace	0.68	0.54	1.23	3.25	1.10	5.57
WL 232HQ	0.66	0.50	1.16	3.33	1.06	5.55
TMF 421	0.68	0.50	1.18	3.20	1.08	5.46
Experimental strains						
4G70	0.68	0.66	1.34	3.31	1.06	5.72
Mean	0.69	0.58	1.27	3.40	1.17	5.84
Maturity (Kalu & Fick)	3.5	5.5				
LSD (P=0.05)	NS	0.17	0.25	0.32	NS	0.53
CV (%)	14.3	25.8	17.4	8.2	14.1	7.9
MCV (%)		29.5	19.9	9.4		9.0
LSR (%)		69.3	62.4	38.0		44.3

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improve. Res. Farm
Planted 25 April 2000, RCB with 6 replicates

Entry	2000 Total 20-Jul Tons DM/A
Released cultivars	
Pioneer Brand 53H81	1.77
DK134	1.75
Pioneer Brand 53V08	1.73
Frontier 2000	1.71
Somerset	1.71
Vernal	1.66
Gold Rush 747	1.63
Legend Gold	1.60
Garst 6410	1.59
Dakotah	1.59
A-30-06	1.58
Husky Supreme	1.51
Maverick	1.51
Shaw	1.51
USA4230	1.46
Multiplier 3	1.32
Experimental strains	
MT 9503	1.85
ZG 9931	1.65
ZG 9941	1.40
Mean	1.62
Maturity (Kalu & Fick)	5.0
LSD (P=0.05)	NS
CV (%)	18.5
MCV (%)	
LSR (%)	

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Highmore, Hyde County, Central Crops and Soils Research Station

Planted 5 May 1998, RCB with 6 replicates

Entries	2000			1999	2-year
	23-May	6-Jul	Total	Total	Total
Tons Dry Matter/Acre					
Released cultivar					
WL 324	1.49	0.51	2.00	4.24	6.24
MagnumV	1.34	0.37	1.70	4.31	6.01
Pioneer Brand 53Q60	1.47	0.46	1.93	4.07	6.01
WL 325HQ	1.27	0.50	1.78	4.09	5.87
Husky Supreme	1.31	0.28	1.59	4.17	5.76
DK140	1.28	0.37	1.65	4.07	5.72
Goldrush 747	1.33	0.42	1.76	3.95	5.71
TMF 421	1.21	0.28	1.49	4.18	5.68
WL 232HQ	1.32	0.37	1.69	3.98	5.67
Garst 620	1.24	0.33	1.56	4.11	5.67
Vernal	1.18	0.27	1.45	4.13	5.58
Pioneer Brand 53V63	1.22	0.37	1.58	3.83	5.41
TMF Multiplier II	1.24	0.28	1.52	3.83	5.35
Frontier 2000	1.26	0.35	1.61	3.56	5.17
Experimental strains					
CW72005	1.40	0.42	1.82	4.13	5.95
CW72008	1.26	0.30	1.56	4.18	5.74
CW5236	1.28	0.30	1.58	4.08	5.66
CW5321	1.19	0.29	1.48	3.89	5.37
Mean	1.28	0.35	1.63	4.03	5.66
Maturity (Kalu & Fick)	3.5	4.6			
LSD (P=0.05)	0.29	NS	NS	0.37	NS
CV (%)	19.6	57.5	26.4	8.0	
MCV (%)	22.5			9.2	
LSR (%)	62.3			49.3	

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station

Planted 23 April 1999, RCB with 6 replicates

Entries	2000				1999	2-year
	26-May	7-Jul	3-Aug	Total	Total	Total
	Tons Dry Matter/Acre					
Released cultivars						
ABT 350	2.04	1.32	0.77	4.12	3.50	7.62
Spirit	1.91	1.28	0.78	3.97	3.61	7.58
AlfaStar	1.86	1.32	0.78	3.97	3.61	7.58
645-11	1.91	1.22	0.72	3.84	3.72	7.56
Garst 620	1.92	1.27	0.74	3.93	3.57	7.50
Pioneer Brand 53Q60	1.90	1.32	0.77	4.00	3.44	7.43
Rebound 4.2	1.94	1.31	0.72	3.98	3.46	7.43
WinterStar	1.88	1.33	0.74	3.94	3.40	7.34
Garst 6410	1.91	1.19	0.75	3.85	3.49	7.34
GH 766	1.84	1.32	0.75	3.91	3.41	7.32
Abound	1.92	1.17	0.73	3.82	3.50	7.32
FQ 314	1.76	1.27	0.77	3.80	3.51	7.31
Garst 6420	2.01	1.23	0.76	3.99	3.24	7.23
Pioneer Brand 54V54	1.83	1.36	0.77	3.96	3.25	7.21
FQ 315	1.77	1.24	0.74	3.75	3.42	7.16
WL232 HQ	1.83	1.23	0.71	3.77	3.37	7.14
Macon	1.78	1.27	0.68	3.73	3.41	7.14
Excalibur II	1.70	1.28	0.73	3.72	3.38	7.10
Sprint	1.79	1.25	0.77	3.82	3.23	7.05
Legend Gold	1.65	1.21	0.74	3.60	3.40	6.99
DK140	1.81	1.27	0.72	3.79	3.19	6.98
WinterKing	1.70	1.18	0.72	3.61	3.37	6.98
A-395	1.73	1.16	0.75	3.63	3.32	6.96
DK124	1.65	1.21	0.75	3.61	3.32	6.93
Vernal	1.81	1.24	0.75	3.80	3.12	6.91
Award	1.64	1.15	0.66	3.45	3.45	6.90
TMF 421	1.53	1.11	0.74	3.39	3.17	6.56
Mean	1.81	1.25	0.74	3.80	3.40	7.20
Maturity (Kalu & Fick)	2.9	4.1	4.3			
LSD (P=0.05)	0.25	NS	NS	0.38	NS	0.57
CV (%)	12.0	12.7	11.6	8.9	8.5	7.0
MCV (%)	13.7			10.1		7.9
LSR (%)	49.0			52.7		54.3

NS=not significant at 0.05 level of probability

MCV=LSD/mean*100

LSR=LSD/range*100

2001 South Dakota Alfalfa Variety Trials

V.N. Owens and E. Omdahl

Establishment and Management

Alfalfa plots are planted at a rate of 15 lbs PLS acre⁻¹ using a Brillion type seeder, with the exception of the 1999 planting at Watertown which was seeded at 20 lbs PLS acre⁻¹. Plots are 3 or 4 feet wide and 20-25 feet in length. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during the harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example, 'Highmore1998' is the trial planted at Highmore in 1998.

2001 Results

Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries.

Trials were planted at Highmore and Brookings. Due to extreme moisture stress, the trial at Highmore was unsuccessful, and there was insufficient moisture to attempt a second summer planting at that site. Good growing conditions at Beresford allowed four cuttings to be taken from that site. Stands at Brookings were harvested 2-3 times since moisture was inadequate late in the season.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605 688-4754

FAX: 605 688-4602

email: owens.vance@ces.sdstate.edu

mailing address: Plant Science Department

South Dakota State University

Box 2207A

Brookings, SD 57007

SOUTH DAKOTA
Beresford, Clay County, Southeast Research Farm
Planted 28 April 2000, RCB with 6 replicates

	2001					2000	00-01
Entry	29-May	11-Jul	7-Aug	25-Sep	Total	Total	Total
	Tons Dry Matter/Acre						
Released cultivars							
Excel	1.89	2.78	1.17	1.22	7.06	3.57	10.63
Garst 6420	1.86	2.77	1.05	1.07	6.75	3.79	10.54
Goldrush 747	1.74	2.82	1.03	1.03	6.61	3.78	10.39
Husky Supreme	1.75	2.75	0.96	1.07	6.53	3.77	10.30
GH 750	1.79	2.77	1.05	0.99	6.59	3.69	10.29
Shaw	1.69	2.66	0.97	1.03	6.36	3.88	10.25
645-II	1.77	2.63	0.94	0.89	6.24	3.85	10.09
Frontier 2000	1.57	2.65	1.02	1.10	6.36	3.61	9.97
Garst 6410	1.84	2.54	0.92	0.83	6.13	3.59	9.71
Multiplier 3	1.65	2.53	1.05	0.96	6.19	3.39	9.58
Pioneer Brand 53H81	1.68	2.59	0.90	0.89	6.06	3.48	9.53
Pioneer Brand 53V08	1.88	2.52	0.92	0.77	6.08	3.30	9.38
Vernal	1.87	2.44	0.91	0.70	5.91	3.35	9.26
Maverick	1.71	2.33	0.86	0.81	5.70	3.43	9.13
Legend Gold	1.81	2.41	0.86	0.71	5.79	3.15	8.94
Experimental strains							
MT 9503	1.88	2.73	1.03	0.99	6.63	3.80	10.43
CW 94008	1.78	2.63	1.06	1.16	6.63	3.74	10.37
CW 54033	1.71	2.71	1.01	1.13	6.55	3.49	10.05
CW 64049	1.73	2.52	1.02	0.94	6.21	3.55	9.76
CW 74040	1.79	2.56	0.97	0.95	6.27	3.37	9.64
CW 64026	1.78	2.38	0.99	0.84	5.98	3.52	9.50
CW 73029	1.82	2.52	0.94	0.84	6.12	3.30	9.42
CW 64004	1.77	2.41	0.98	0.81	5.97	3.41	9.38
ZG 9840	1.89	2.30	0.83	0.60	5.62	3.35	8.97
CW 75044	1.63	2.21	0.91	0.85	5.60	3.30	8.90
Mean	1.77	2.57	0.97	0.93	6.24	3.54	9.78
Maturity (Kalu & Fick)	3.6	6.0	4.4	2.9			
LSD (P=0.05)	0.43	NS	0.42	0.52	0.88	0.43	1.05
CV (%)	7.9	12.9	13.6	22.0	9.6	10.5	8.6
MCV (%)	24.3		43.1	56.1	14.1	12.0	10.7
LSR (%)	134.4		123.5	83.9	60.3	57.7	60.7

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

50 lbs P2O5/Acre - preplant

Treflan applied preplant

SOUTH DAKOTA

Brookings, Brookings County, SD Crop Improvement Research Farm
Planted 22 April 1998, RCB with 6 replicates

Entries	2001		Total	2000	1999	1998	98-01
	31-May	17-Jul		Total	Total	Total	Total
Tons Dry Matter/Acre							
Released cultivars							
Magnum V	2.77	0.57	3.35	1.46	3.83	1.12	9.75
Pioneer Brand 53Q60	2.68	0.65	3.35	1.36	3.60	1.15	9.45
Geneva	2.38	0.62	3.02	1.46	3.74	1.20	9.40
ABT 350	2.72	0.75	3.43	1.37	3.39	1.16	9.35
Husky Supreme	2.55	0.53	3.07	1.34	3.55	1.38	9.35
WinterStar	2.50	0.48	3.03	1.26	3.62	1.24	9.15
WinterKing	2.37	0.62	3.00	1.33	3.52	1.15	9.03
Vernal	2.68	0.52	3.22	1.27	3.27	1.26	9.02
Feast + Ev	2.60	0.53	3.13	1.16	3.45	1.21	8.97
Target II Plus	2.48	0.63	3.13	1.22	3.36	1.15	8.87
Rainier	2.35	0.52	2.90	1.32	3.43	1.19	8.82
Yielder	2.53	0.67	3.15	1.34	3.08	1.19	8.77
DK 140	2.38	0.52	2.92	1.19	3.40	1.22	8.73
Pioneer Brand 53V63	2.40	0.60	3.03	1.18	3.36	1.14	8.72
Frontier 2000	2.37	0.62	2.97	1.32	3.29	1.12	8.67
GoldRush 747	2.35	0.53	2.92	1.18	3.27	1.27	8.62
TMF 421	2.48	0.55	3.07	1.18	3.20	1.07	8.47
WL 232HQ	2.42	0.48	2.92	1.16	3.33	1.06	8.45
Ace	2.25	0.58	2.80	1.23	3.25	1.09	8.38
Experimental strains							
4G70	2.45	0.80	3.22	1.34	3.31	1.06	8.95
Mean	2.47	0.58	3.06	1.27	3.40	1.17	8.89
Maturity (Kalu & Fick)	3.6	5.0					
LSD (P=0.05)	0.51	NS	0.65	0.25	0.32	NS	0.92
CV (%)	7.9	35.4	10.4	17.4	8.2	14.1	7.2
MCV (%)	20.7		21.3	19.9	9.4		10.3
LSR (%)	98.1		103.2	62.4	38.0		67.2

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

*Fertilized with 55 lbs of P2O5 and 65 lbs of K2O 6/5/00

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improve. Res. Farm
Planted 25 April 2000, RCB with 6 replicates

Entry	2001			2000	00-01
	25-Jun	17-Jul	Total	Total	Total
Tons Dry Matter/Acre					
Released cultivars					
Vernal	0.93	0.58	1.53	1.66	3.19
Pioneer Brand 53V08	0.68	0.62	1.32	1.73	3.04
DK134	0.70	0.60	1.27	1.75	3.03
Pioneer Brand 53H81	0.68	0.53	1.20	1.77	2.97
A-30-06	0.78	0.55	1.32	1.58	2.89
Legend Gold	0.63	0.63	1.27	1.60	2.88
Somerset	0.60	0.58	1.15	1.71	2.87
Maverick	0.70	0.65	1.35	1.51	2.85
Frontier 2000	0.58	0.55	1.12	1.71	2.84
Dakotah	0.62	0.63	1.23	1.59	2.83
Gold Rush 747	0.57	0.58	1.13	1.63	2.77
Garst 6410	0.55	0.53	1.10	1.59	2.69
Husky Supreme	0.55	0.60	1.15	1.51	2.67
USA4230	0.58	0.62	1.20	1.46	2.65
Shaw	0.48	0.58	1.10	1.51	2.59
Multiplier 3	0.53	0.57	1.10	1.32	2.43
Experimental strains					
MT 9503	0.75	0.68	1.43	1.85	3.29
ZG 9941	0.72	0.47	1.20	1.68	2.86
ZG 9931	0.77	0.60	1.35	1.65	3.02
Mean	0.67	0.58	1.25	1.62	2.87
Maturity (Kalu & Fick)	4.6	5.0		5.0	
LSD (P=0.05)	0.46	NS	0.53	NS	NS
CV (%)	23.6	20.6	17.2	18.5	14.5
MCV (%)	68.7		42.3		
LSR (%)	102.2		123.3		

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

*Sprayed with Pursuit on 6/28/00

50 lbs P2O5 applied preplant

SOUTH DAKOTA

Highmore, Hyde County, Central Crops and Soils Research Station
Planted 5 May 1998, RCB with 6 replicates

Entries	2001			2000	1999	99-01
	1-Jun	12-Jul	Total	Total	Total	Total
Tons Dry Matter/Acre						
Released cultivar						
WL 324	1.77	1.37	3.14	2.00	4.24	9.37
MagnumV	1.88	1.15	3.02	1.70	4.31	9.04
WL 232HQ	1.91	1.36	3.26	1.69	3.98	8.94
Pioneer Brand 53Q60	1.76	1.13	2.88	1.93	4.07	8.89
WL 325HQ	1.68	1.27	2.95	1.78	4.09	8.82
Goldrush 747	1.91	1.13	3.04	1.76	3.95	8.74
Vernal	1.92	1.05	2.97	1.46	4.13	8.56
Garst 620	1.72	1.14	2.86	1.56	4.11	8.53
Pioneer Brand 53V63	2.00	1.10	3.11	1.58	3.83	8.52
Husky Supreme	1.76	1.00	2.75	1.59	4.17	8.51
TMF 421	1.79	0.99	2.78	1.49	4.18	8.46
DK140	1.64	0.83	2.46	1.65	4.07	8.19
TMF Multiplier II	1.88	0.91	2.78	1.52	3.83	8.13
Frontier 2000	1.60	1.02	2.62	1.61	3.56	7.79
Experimental strains						
CW72005	1.81	1.29	3.10	1.82	4.13	9.04
CW5321	1.82	1.28	3.10	1.48	3.88	8.46
CW72008	1.58	1.04	2.61	1.56	4.18	8.35
CW5236	1.63	0.99	2.62	1.58	4.08	8.28
Mean	1.78	1.10	2.88	1.63	4.03	8.54
Maturity (Kalu & Fick)	4.0	6.0				
LSD (P=0.05)	NS	NS	NS	NS	0.37	NS
CV (%)	18.3	38.1	20.8	26.4	8.0	12.8
MCV (%)					9.2	
LSR (%)					49.3	

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station
Planted 23 April 1999, RCB with 6 replicates

Entries	2001				2000	1999	99-01
	31-May	9-Jul	6-Aug	Total	Total	Total	Total
Tons Dry Matter/Acre							
Released cultivars							
ABT 350	1.76	1.58	0.92	4.26	4.12	3.50	11.88
Rebound 4.2	1.63	1.74	1.00	4.36	3.98	3.46	11.79
645-11	1.62	1.64	0.97	4.23	3.84	3.72	11.79
Garst 6420	1.81	1.70	1.01	4.51	3.99	3.24	11.74
Garst 620	1.70	1.58	0.90	4.19	3.93	3.57	11.69
Pioneer Brand 53Q60	1.54	1.73	0.96	4.24	4.00	3.44	11.68
AlfaStar	1.60	1.52	0.96	4.07	3.97	3.61	11.65
Spirit	1.50	1.52	0.92	3.94	3.97	3.61	11.52
Pioneer Brand 54V54	1.67	1.66	0.94	4.26	3.95	3.25	11.46
Garst 6410	1.56	1.57	0.98	4.11	3.85	3.49	11.45
WinterStar	1.63	1.53	0.93	4.09	3.94	3.40	11.43
Abound	1.60	1.58	0.93	4.11	3.82	3.50	11.43
Macon	1.59	1.72	0.98	4.29	3.73	3.41	11.43
GH 766	1.66	1.55	0.89	4.09	3.90	3.41	11.41
WL232 HQ	1.56	1.61	0.96	4.14	3.77	3.37	11.28
FQ 314	1.52	1.53	0.90	3.95	3.80	3.50	11.26
FQ 315	1.53	1.57	0.97	4.07	3.74	3.42	11.23
Excalibur II	1.61	1.51	0.86	3.99	3.72	3.38	11.09
Sprint	1.68	1.45	0.89	4.01	3.81	3.23	11.06
A-395	1.58	1.54	0.88	3.99	3.63	3.32	10.95
DK124	1.57	1.57	0.87	4.02	3.61	3.32	10.94
WinterKing	1.61	1.53	0.80	3.94	3.61	3.37	10.91
DK140	1.50	1.50	0.89	3.89	3.79	3.19	10.87
Legend Gold	1.50	1.48	0.86	3.84	3.60	3.40	10.83
Vernal	1.53	1.46	0.90	3.89	3.80	3.11	10.80
Award	1.46	1.49	0.83	3.78	3.45	3.45	10.68
TMF 421	1.60	1.55	0.87	4.03	3.39	3.17	10.59
Mean	1.60	1.57	0.92	4.08	3.80	3.40	11.28
Maturity (Kalu & Fick)	3.8	4.4	4.4				
LSD (P=0.05)	NS	0.43	0.32	0.59	0.38	NS	0.93
CV (%)	12.0	8.9	8.8	6.5	8.9	8.5	7.0
MCV (%)		27.4	34.8	14.5	10.1		8.2
LSR (%)		148.3	152.4	80.8	52.7		72.1

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

*Fertilized 6/6/00 with 50 lbs P205 and 120 lbs K20

2002 South Dakota Alfalfa Variety Trials

V.N. Owens and E. Omdahl

Establishment and Management

Alfalfa plots are planted at a rate of 15 lbs PLS acre⁻¹ using a Brillion type seeder, with the exception of the 1999 planting at Watertown which was seeded at 20 lbs PLS acre⁻¹. Plots are 4 feet wide and 20-25 feet in length. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during the harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example, 'Brookings 2000' is the trial planted near Brookings in 2000.

2002 Results

Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries.

Trials were planted at Highmore and Brookings. Due to extreme moisture stress, the trial at Highmore was not harvested. This trial will be evaluated in 2003 if the stand is uniform. It will be replanted if an insufficient stand is present.

Contact Information

If you have any questions about this report please contact Vance Owens or Eva Omdahl.

Vance Owens
office phone: 605-688-6088
FAX: 605 688-4452
email: Vance_Owens@sdstate.edu
mailing address: Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

Eva Omdahl
office phone: 605-688-4501
FAX: 605-688-4452
email: Eva_Omdahl@sdstate.edu
mailing address: Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

E

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improvement Research Farm

Planted 25 April 2000, RCB with 6 replicates

Entry	2002				2001	2000	00-02
	11-Jun	9-Jul	19-Aug	Total	Total	Total	Total
	Tons Dry Matter/Acre						
Released cultivars							
Vernal	0.86	0.20	0.65	1.72	1.53	1.66	4.90
DK134	0.77	0.23	0.65	1.66	1.29	1.75	4.70
Dakota	0.90	0.27	0.63	1.80	1.24	1.59	4.63
Pioneer Brand 53V08	0.77	0.20	0.58	1.55	1.31	1.73	4.59
Legend Gold	0.86	0.18	0.66	1.71	1.28	1.60	4.59
Pioneer Brand 53H81	0.77	0.22	0.57	1.57	1.20	1.77	4.54
Maverick	0.82	0.19	0.60	1.63	1.35	1.51	4.48
Gold Rush 747	0.89	0.16	0.63	1.69	1.14	1.63	4.45
Somerset	0.79	0.22	0.55	1.56	1.16	1.71	4.43
A-30-06	0.86	0.11	0.56	1.53	1.31	1.58	4.42
Frontier 2000	0.77	0.17	0.57	1.50	1.13	1.71	4.34
Husky Supreme	0.82	0.22	0.61	1.65	1.16	1.51	4.32
USA4230	0.80	0.19	0.56	1.56	1.19	1.46	4.21
Shaw	0.78	0.14	0.63	1.56	1.08	1.51	4.15
Garst 6410	0.76	0.18	0.52	1.46	1.10	1.59	4.14
Multiplier 3	0.80	0.15	0.52	1.47	1.11	1.32	3.90
Experimental strains							
MT 9503	0.83	0.17	0.59	1.60	1.44	1.85	4.88
ZG 9931	0.82	0.06	0.58	1.46	1.36	1.65	4.48
ZG 9941	0.76	0.08	0.59	1.43	1.18	1.68	4.29
Mean	0.81	0.18	0.59	1.59	1.25	1.62	4.46
Maturity (Kalu & Fick)	4.0	5.5	4.5				
LSD (P=0.05)	NS	NS	0.07	0.19	0.25	NS	NS
CV (%)	11.8	58.7	10.9	10.6	17.4	18.6	11.4
MCV (%)			12.4	12.2	20.0		
LSR (%)			52.4	52.4	55.6		

NS = not significant at 0.05 level of probability

*Sprayed with Pursuit on 6/28/00

MCV = LSD/mean*100

50 lbs P2O5 applied preplant

LSR=LSD/range*100

ARCHIVE

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm

Planted 28 April 2000, RCB with 6 replicates

Entry	2002				2001	2000	00-02
	31-May	8-Jul	20-Aug	Total	Total	Total	Total
Tons Dry Matter/Acre							
Released cultivars							
Excel	1.77	1.58	0.99	4.33	7.06	3.57	14.97
Garst 6420	1.65	1.32	0.98	3.95	6.75	3.79	14.49
GoldRush 747	1.60	1.40	0.92	3.91	6.61	3.78	14.30
GH 750	1.62	1.40	0.94	3.95	6.59	3.69	14.24
Shaw	1.72	1.36	0.87	3.96	6.36	3.88	14.21
Husky Supreme	1.57	1.35	0.96	3.87	6.53	3.77	14.16
645-II	1.63	1.37	0.97	3.97	6.24	3.85	14.05
Frontier 2000	1.62	1.28	0.89	3.80	6.36	3.61	13.77
Multiplier 3	1.55	1.25	0.96	3.76	6.19	3.39	13.34
Garst 6410	1.53	1.18	0.85	3.56	6.13	3.59	13.28
Pioneer Brand 53H81	1.51	1.11	0.85	3.47	6.06	3.48	13.01
Pioneer Brand 53V08	1.44	1.03	0.80	3.27	6.08	3.30	12.64
Vernal	1.44	0.88	0.90	3.22	5.91	3.35	12.47
Legend Gold	1.47	1.07	0.88	3.42	5.79	3.15	12.35
Maverick	1.37	0.98	0.83	3.18	5.70	3.43	12.31
Experimental strains							
CW 94008	1.64	1.40	0.97	4.02	6.63	3.74	14.39
MT 9503	1.61	1.31	0.97	3.89	6.63	3.80	14.32
CW 54033	1.53	1.32	0.89	3.74	6.55	3.49	13.79
CW 64049	1.43	1.23	0.92	3.59	6.21	3.55	13.35
CW 74040	1.50	1.18	0.93	3.62	6.27	3.37	13.26
CW 64004	1.53	1.23	0.96	3.72	5.97	3.41	13.10
CW 73029	1.43	1.05	0.93	3.41	6.12	3.30	12.84
CW 64026	1.37	1.04	0.90	3.31	5.98	3.52	12.80
CW 75044	1.43	1.29	0.93	3.65	5.60	3.30	12.55
ZG 9840	1.46	1.01	0.89	3.36	5.62	3.35	12.34
Mean	1.54	1.22	0.92	3.68	6.24	3.54	13.45
Maturity (Kalu & Fick)	3.6	6.0	5.5				
LSD (P=0.05)	0.16	0.33	0.10	0.52	0.68	0.43	1.33
CV (%)	9.0	23.6	9.7	12.4	9.6	10.5	8.6
MCV (%)	10.2	27.0	11.0	14.2	10.9	12.0	9.9
LSR (%)	39.3	47.2	53.2	45.5	46.8	58.3	50.6

NS = not significant at 0.05 level of probability

50 lbs P2O5/Acre - preplant

MCV = LSD/mean*100

Treflan applied preplant

LSR=LSD/range*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station

Planted 23 April 1999, RCB with 6 replicates

Entries	2002				2001	2000	1999	99-02
	4-Jun	9-Jul	18-Aug	Total	Total	Total	Total	Total
Tons Dry Matter/Acre								
Released cultivars								
Rebound 4.2	0.88	1.37	1.20	3.45	4.36	3.98	3.46	15.24
ABT 350	0.87	1.28	1.20	3.36	4.26	4.12	3.50	15.23
645-11	0.89	1.29	1.21	3.39	4.23	3.84	3.72	15.18
Garst 6420	0.95	1.27	1.19	3.41	4.51	3.99	3.24	15.16
Pioneer Brand 54V54	0.87	1.44	1.37	3.67	4.26	3.95	3.25	15.14
AlfaStar	0.71	1.33	1.33	3.37	4.07	3.97	3.61	15.02
Garst 620	0.84	1.30	1.20	3.33	4.19	3.93	3.57	15.02
Pioneer Brand 53Q60	0.87	1.25	1.19	3.31	4.24	4.00	3.44	14.99
Macon	0.89	1.37	1.25	3.51	4.29	3.73	3.41	14.94
Spirit	0.80	1.26	1.30	3.37	3.94	3.97	3.61	14.88
Abound	0.83	1.25	1.18	3.25	4.11	3.82	3.50	14.68
Garst 6410	0.74	1.26	1.20	3.20	4.11	3.85	3.49	14.66
FQ 314	0.79	1.26	1.27	3.32	3.95	3.80	3.50	14.58
GH 766	0.70	1.22	1.23	3.15	4.09	3.90	3.41	14.56
WinterStar	0.73	1.20	1.16	3.10	4.09	3.94	3.40	14.53
FQ 315	0.78	1.30	1.22	3.29	4.07	3.74	3.42	14.52
WL232 HQ	0.77	1.26	1.22	3.25	4.14	3.77	3.37	14.52
Sprint	0.73	1.36	1.27	3.36	4.01	3.81	3.23	14.42
Excalibur II	0.70	1.24	1.24	3.18	3.99	3.72	3.38	14.28
DK 140	0.72	1.28	1.21	3.21	3.89	3.79	3.19	14.08
A-395	0.76	1.23	1.12	3.11	3.99	3.63	3.32	14.06
Legend Gold	0.71	1.29	1.21	3.21	3.84	3.60	3.40	14.04
Vernal	0.72	1.28	1.24	3.24	3.89	3.80	3.11	14.04
DK 124	0.72	1.20	1.16	3.07	4.02	3.61	3.32	14.01
WinterKing	0.66	1.25	1.14	3.04	3.94	3.61	3.37	13.96
Award	0.71	1.14	1.18	3.04	3.78	3.45	3.45	13.72
TMF 421	0.66	1.22	1.19	3.06	4.03	3.39	3.17	13.65
Mean	0.78	1.27	1.21	3.26	4.08	3.80	3.40	14.54
Maturity (Kalu & Fick)	3.5	5.5	5.5					
LSD (P=0.05)	0.12	0.14	NS	0.29	0.30	0.38	0.33	0.94
CV (%)	14.0	9.6		7.8	6.5	8.9	8.5	5.7
MCV (%)	16.0	11.0		8.9	7.5	10.1	9.7	6.5
LSR (%)	42.8	46.6		45.9	41.8	52.7	53.8	59.4

NS = not significant at 0.05 level of probability

LSR=LSD/range*100

*Fertilized 6/6/00 with 50 lbs P205 and 120 lbs K20

MCV = LSD/mean*100

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station

Planted 3 May 2001, RCB with 6 replicates

Entries	2002			
	4-Jun	9-Jul	18-Aug	Total
	Tons Dry Matter/Acre			
Released cultivars				
WL327	0.58	0.63	0.64	1.85
HybriForce 400	0.58	0.6	0.62	1.81
4 Traffic	0.54	0.55	0.58	1.66
WL342	0.53	0.56	0.56	1.64
Macon	0.48	0.62	0.53	1.63
Monument II	0.51	0.55	0.57	1.63
Husky Supreme	0.47	0.54	0.58	1.59
Reliance	0.56	0.51	0.52	1.59
Feast + EV	0.49	0.54	0.55	1.58
Frontier 2000	0.5	0.51	0.56	1.58
Pioneer Brand 54V54	0.48	0.54	0.49	1.51
Maverick	0.43	0.46	0.58	1.47
Vernal	0.47	0.51	0.48	1.46
GoldRush 747	0.36	0.45	0.56	1.37
Somerset	0.36	0.46	0.49	1.31
Mean	0.49	0.54	0.55	1.58
Maturity (Kalu & Fick)	3.5	4.5	5.0	
LSD (P=0.05)	NS	NS	NS	NS
CV (%)	35.5	19.9	22.1	21.9
MCV (%)				
LSR (%)				

NS = not significant at 0.05 level of probability

50 lbs P2O5/Acre - preplant

MCV = LSD/mean*100

Treflan applied preplant

LSR=LSD/range*100

2003 South Dakota Alfalfa Variety Trials

V.N. Owens and E. Omdahl

Establishment and Management

Alfalfa plots are planted at a rate of 18 lbs PLS acre⁻¹ using a Brillion type seeder. Plots are 4 feet wide and 20 feet in length. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during the harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example, 'Brookings 2000' is the trial planted near Brookings in 2000.

2003 Results

Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries.

New trials were planted at Beresford and Highmore. Due to moisture stress in parts of the state, the trials at Highmore and Brookings were harvested only once during the season.

Contact Information

If you have any questions about this report please contact Vance Owens.

Vance Owens
office phone: 605-688-6088
FAX: 605 688-4452
email: Vance_Owens@sdstate.edu
mailing address: Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improvement Research Farm

Planted 25 April 2000, RCB with 6 replicates

	2003	2002	2001	2000	00-03
Entry	3-Jun	Total	Total	Total	Total
	Tons Dry Matter/Acre				
Released cultivars					
Vernal	1.50	1.72	1.53	1.66	6.41
Dakota	1.55	1.80	1.24	1.59	6.20
Legend Gold	1.53	1.71	1.28	1.60	6.10
DK134	1.37	1.66	1.29	1.75	6.05
Gold Rush 747	1.55	1.69	1.14	1.63	6.00
A-30-06	1.50	1.53	1.31	1.58	5.92
53H81	1.35	1.57	1.20	1.77	5.89
53V08	1.32	1.55	1.31	1.73	5.89
Maverick	1.42	1.63	1.35	1.51	5.88
Somerset	1.35	1.56	1.16	1.71	5.76
Husky Supreme	1.42	1.65	1.16	1.51	5.75
Frontier 2000	1.32	1.50	1.13	1.71	5.67
USA4230	1.30	1.56	1.19	1.46	5.50
Shaw	1.27	1.56	1.08	1.51	5.42
6410	1.25	1.46	1.10	1.59	5.39
Multiplier 3	1.37	1.47	1.11	1.32	5.25
Released cultivar mean	1.40	1.60	1.22	1.60	5.82
Experimental strains					
MT 9503	1.45	1.60	1.44	1.85	6.33
ZG 9931	1.38	1.46	1.36	1.65	5.84
ZG 9941	1.27	1.43	1.18	1.68	5.55
Experimental strain mean	1.37	1.50	1.33	1.73	5.91
Grand mean	1.39	1.59	1.25	1.62	5.85
Maturity (Kalu & Fick)	4.0				
LSD (P=0.05)	NS	0.19	0.25	NS	NS
CV (%)	14.3	10.6	17.4	18.6	10.8
MCV (%)		12.0	20.0		
LSR (%)		63.3	55.6		

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

*Sprayed with Pursuit on 6/28/00

50 lbs P205 applied preplant

SOUTH DAKOTA

Brookings, Brookings Co., SD Crop Improvement Research Farm

Planted 1 May 2002, RCB with 6 replicates

2003

Entry 31-May

Tons DM/Acre

Released cultivars

Dakota	0.88
54H91	0.85
Hybriforce-400	0.85
6420	0.82
Husky	0.82

DS 9809	0.80
Multiplier 3	0.80
DS 211 Hyb	0.78
Feast +Ev	0.78
GoldRush 747	0.78

MegaTon 3.0	0.78
Survivor	0.77
WL 319 HQ	0.77
WL 327	0.77
Triad LA	0.75

54V54	0.73
A 30-06	0.73
Setter	0.73
Ameristand 403T	0.72
GH 766	0.72

LS 102	0.72
Vernal	0.72
Maverick	0.68
Frontier 2000	0.65

Grand mean	0.77
Maturity (Kalu & Fick)	3.2
LSD (P=0.05)	NS
CV (%)	14.9
MCV (%)	
LSR (%)	

NS = not significant at 0.05 level of probability

MCV = $LSD / \text{mean} * 100$

LSR = $LSD / \text{range} * 100$

Treflan applied before planting

50 lbs P2O5 applied preplant

SOUTH DAKOTA
 Beresford, Clay County, Southeast Research Farm
 Planted 28 April 2000, RCB with 6 replicates

Entry	2003					2002	2001	2000	00-03
	29-May	3-Jul	31-Jul	1-Sep	Total	Total	Total	Total	Total
Tons Dry Matter/Acre									
Released cultivars									
Excel	4.48	1.74	1.99	0.93	9.14	4.33	7.06	3.57	24.11
6420	4.44	1.75	1.79	0.72	8.69	3.95	6.75	3.79	23.18
GH 750	4.04	1.89	1.78	0.88	8.59	3.95	6.59	3.69	22.82
Shaw	4.25	1.74	1.62	0.65	8.26	3.96	6.36	3.88	22.47
645-II	4.18	1.74	1.73	0.62	8.28	3.97	6.24	3.85	22.33
GoldRush 747	4.18	1.65	1.57	0.62	8.02	3.91	6.61	3.78	22.32
Husky Supreme	3.96	1.67	1.61	0.63	7.87	3.87	6.53	3.77	22.04
Frontier 2000	4.10	1.63	1.46	0.61	7.81	3.80	6.36	3.61	21.58
Multiplier 3	3.96	1.72	1.81	0.68	8.15	3.76	6.19	3.39	21.49
6410	3.87	1.63	1.51	0.57	7.58	3.56	6.13	3.59	20.86
53H81	3.91	1.70	1.54	0.59	7.74	3.47	6.06	3.48	20.75
53V08	3.87	1.50	1.50	0.45	7.32	3.27	6.08	3.30	19.96
Vernal	3.85	1.56	1.48	0.42	7.31	3.22	5.91	3.35	19.78
Legend Gold	3.81	1.50	1.45	0.37	7.13	3.42	5.79	3.15	19.48
Maverick	3.56	1.45	1.34	0.42	6.77	3.18	5.70	3.43	19.09
Released cultivar mean	4.03	1.66	1.61	0.61	7.91	3.71	6.29	3.58	21.48
Experimental strains									
CW 94008	4.21	1.96	1.80	0.74	8.70	4.02	6.63	3.74	23.09
MT 9503	4.21	1.76	1.72	0.63	8.32	3.89	6.63	3.80	22.64
CW 54033	3.94	1.80	1.60	0.67	8.02	3.74	6.55	3.49	21.80
CW 74040	4.04	1.82	1.71	0.72	8.31	3.62	6.27	3.37	21.56
CW 64049	3.66	1.68	1.62	0.71	7.67	3.59	6.21	3.55	21.02
CW 64004	3.91	1.62	1.56	0.55	7.65	3.72	5.97	3.41	20.75
CW 73029	3.78	1.64	1.61	0.56	7.59	3.41	6.12	3.30	20.43
CW 75044	3.80	1.72	1.72	0.58	7.81	3.65	5.60	3.30	20.37
CW 64026	3.69	1.72	1.51	0.51	7.43	3.31	5.98	3.52	20.23
ZG 9840	3.81	1.53	1.46	0.42	7.21	3.36	5.62	3.35	19.55
Experimental strain mean	3.91	1.73	1.63	0.61	7.87	3.63	6.16	3.48	21.14
Grand mean	3.98	1.68	1.62	0.61	7.90	3.68	6.24	3.54	21.35
Maturity (Kalu & Fick)	4.0	5.4	4.5	4.5					
LSD (P=0.05)	0.46	NS	0.22	0.28	1.02	0.52	0.68	0.43	2.22
CV (%)	10.0	14.7	11.8	39.7	11.3	12.4	9.6	10.5	9.1
MCV (%)	11.6		13.6	45.4	12.9	14.2	10.9	12.0	10.4
LSR (%)	50.3		33.9	49.8	43.1	45.5	46.8	58.3	44.3

NS = not significant at 0.05 level of probability

50 lbs P2O5/Acre - preplant

MCV = LSD/mean*100

Treflan applied preplant

LSR=LSD/range*100

SOUTH DAKOTA

Beresford, Clay County, Southeast Research Farm

Planted 29 April 2003, RCB with 6 replicates

Entry	2003		Total
	15-Jul	1-Sep	
	Tons DM/Acre		
Released cultivars			
6420	1.18	1.53	2.72
Bullseye	1.42	1.27	2.68
Rugged	1.35	1.28	2.62
Hybriforce-420/Wet	1.25	1.27	2.52
Gold Rush 747	1.22	1.28	2.50
A 30-06	1.23	1.25	2.48
Alfastar II	1.35	1.15	2.48
Rebel	1.30	1.17	2.48
FSG 406	1.18	1.28	2.43
54V46	1.22	1.20	2.42
Husky Supreme	1.27	1.15	2.42
Journey Brand 204	1.18	1.20	2.40
Extreme	1.23	1.15	2.37
54Q25	1.23	1.13	2.35
Evermore	1.37	0.95	2.33
420	1.13	1.17	2.32
FSG 505	1.22	1.05	2.30
WL 319HQ	1.20	1.08	2.28
Vernal	1.13	1.15	2.25
FSG 351	1.03	1.22	2.23
Notice II	1.15	1.05	2.23
WL 357HQ	1.13	1.10	2.23
4500	1.17	1.05	2.18
Somerset	1.12	1.05	2.17
Abundance	0.98	1.07	2.03
Grand mean	1.21	1.17	2.38
Maturity (Kalu & Fick)	5.0	4.0	
LSD (P=0.05)	NS	NS	NS
CV (%)	18.1	21.1	14.6
MCV (%)			
LSR (%)			

NS = not significant at 0.05 level of probability

MCV = $LSD / \text{mean} * 100$

Treflan applied before planting

LSR = $LSD / \text{range} * 100$

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA

Highmore, Hyde County, Central Research Farm

Planted 28 April 2003, RCB with 6 replicates

Entry 2003
14-Jul

Tons DM/acre

Released cultivars

Hybriforce-420/Wet	1.23
Somerset	1.22
Setter	1.21
Alfastar II	1.18
Hybriforce-400	1.17

FK 421	1.15
WL 357HQ	1.15
Husky Supreme	1.13
Multiplier 3	1.13
Gold Rush 747	1.11

Vernal	1.09
DKA 42-15	1.07
Maverick	1.05
Journey Brand 204	1.04
Notice II	1.04

A 30-06	1.03
54V54	0.98
<i>Released cultivar mean</i>	1.12

Experimental strains

CW 04030	1.10
CW 93013	1.10
CW 04027	1.07
CW 14026	1.07
CW 04022	0.99

CW 83010	0.98
CW 03019	0.91
CW 94023	0.91
WL 319HQ	0.86
CW 94025	0.83
<i>Experimental strain mean</i>	0.98

Grand mean	1.07
Maturity (Kalu & Fick)	4.5
LSD (P=0.05)	0.23
CV (%)	19.2
MCV (%)	21.9
LSR (%)	58.2

NS = not significant at 0.05 level of probability

MCV = $LSD / \text{mean} * 100$

Treflan applied before planting

LSR = $LSD / \text{range} * 100$

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA

Watertown, Codington County, Northeast Experiment Station

Planted 3 May 2001, RCB with 6 replicates

Entries	13-Jun	2003 8-Jul	Total	2002 Total	2002-03 Total
	Tons Dry Matter/Acre				
Released cultivars					
WL327	1.99	0.52	2.51	1.85	4.36
HybriForce 400	1.95	0.58	2.53	1.81	4.34
54V54	2.02	0.57	2.59	1.51	4.10
WL342	1.92	0.53	2.45	1.64	4.09
Reliance	1.96	0.50	2.46	1.59	4.05
Feast + EV	2.00	0.46	2.46	1.58	4.04
Macon	1.88	0.50	2.37	1.63	4.00
Monument II	1.83	0.54	2.37	1.63	4.00
Frontier 2000	1.86	0.52	2.37	1.58	3.95
4 Traffic	1.81	0.44	2.25	1.66	3.91
Husky Supreme	1.83	0.47	2.30	1.59	3.89
Maverick	1.84	0.51	2.35	1.47	3.83
GoldRush 747	1.87	0.45	2.32	1.37	3.69
Vernal	1.82	0.38	2.20	1.46	3.66
Somerset	1.81	0.41	2.22	1.31	3.53
Grand mean	1.89	0.49	2.38	1.58	3.96
Maturity (Kalu & Fick)	4.5	4.0			
LSD (P=0.05)	NS	NS	NS	NS	NS
CV (%)	14.2	24.4	14.4	21.9	15.4
MCV (%)					
LSR (%)					

NS = not significant at 0.05 level of probability

50 lbs P2O5/Acre - preplant

MCV = $LSD/mean \times 100$

Treflan applied preplant

LSR= $LSD/range \times 100$

2004 South Dakota Alfalfa Variety Trials

Vance N. Owens and Chris Lee

Establishment and Management

Alfalfa plots are planted at a rate of 18 lbs PLS acre⁻¹ using a Brillion type seeder. Plots are 4 feet wide and 20 feet long. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2002' is the trial planted near Brookings in 2002.

2004 Results

New trials were planted at Brookings and Watertown. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present). With the exception of the Brookings location where two and one cuttings were taken from the established and newly planted trials, respectively, all trial locations received adequate moisture for three to four harvests in 2004.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088

FAX: 605 688-4452

email: Vance.Owens@sdstate.edu

mailing address:

Plant Science Department

South Dakota State University

NPB 247, Box 2140-C

Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Brookings, Brookings Co., SD Crop Improvement Research Farm
Planted 1 May 2002, Randomized complete block with 6 replicates

Entry	2004			2003	2-year
	4-Jun	13-Jul	Total	Total	total
	Tons DM/Acre				
Released cultivars					
Husky	0.86	1.06	1.92	0.82	2.77
Dakota	0.82	1.06	1.88	0.88	2.76
Hybriforce-400	0.81	1.04	1.85	0.85	2.72
6420	0.84	1.04	1.88	0.82	2.72
Survivor	0.83	1.01	1.84	0.77	2.62
54H91	0.77	1.00	1.77	0.85	2.61
Vernal	0.82	1.04	1.86	0.72	2.59
LS 102	0.81	1.05	1.86	0.72	2.58
Frontier 2000	0.79	1.14	1.93	0.65	2.58
Feast +Ev	0.74	1.04	1.78	0.78	2.56
DS 9809	0.70	1.03	1.74	0.80	2.54
WL 319 HQ	0.78	0.99	1.77	0.77	2.54
Multiplier 3	0.73	0.98	1.71	0.80	2.52
DS 211 Hyb	0.71	1.02	1.73	0.78	2.52
Triad LA	0.78	0.95	1.74	0.75	2.50
WL 327	0.65	1.04	1.69	0.77	2.47
GoldRush 747	0.70	0.92	1.62	0.78	2.42
Setter	0.69	0.98	1.67	0.73	2.41
Ameristand 403T	0.71	0.98	1.68	0.72	2.40
54V54	0.66	0.89	1.55	0.73	2.28
MegaTon 3.0	0.64	0.83	1.47	0.78	2.27
GH 766	0.61	0.88	1.49	0.72	2.23
A 30-06	0.64	0.83	1.47	0.73	2.22
Maverick	0.61	0.83	1.44	0.68	2.14
Average	0.74	0.99	1.72	0.77	2.50
Maturity (Kalu & Fick)	4.0	5.0			
LSD (P=0.05)	NS	NS	NS	NS	NS
CV (%)	22.1	20.5	19.3	14.9	14.3
MCV (%)					
LSR (%)					

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

LSR=LSD/range*100

Treflan applied before planting

50 lbs P2O5 applied preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Brookings, Brookings Co., SD Crop Improvement Research Farm
Planted 28 April 2004, Randomized complete block with 6 replicates

Entry	3-Aug 2004 Tons DM/Acre
54H91	1.42
6400HT	1.39
54V46	1.38
WL 357HQ	1.37
Vernal	1.37
Jade 111 NC+	1.34
6415	1.33
54Q25	1.33
Hybriforce-420/wet	1.29
Summer Gold	1.28
Average	1.35
Maturity (Kalu & Fick)	5.0
LSD (P=0.05)	NS
CV (%)	6.6
MCV (%)	
LSR (%)	

NS = not significant at 0.05 level of probability

MCV = $\text{LSD}/\text{mean} \times 100$

LSR = $\text{LSD}/\text{range} \times 100$

Treflan applied before planting

75 lbs P205 applied preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL
 Beresford, Clay County, Southeast Research Farm
 Planted 29 April 2003, Randomized complete block with 6 replicates

Entry	2004					2003	2-year
	27-May	29-Jun	3-Aug	20-Sep	Total	Total	Total
Tons DM/Acre							
Released cultivars							
Alfatar II	2.77	2.00	1.30	1.06	7.12	8.18	15.31
Evermore	2.71	1.96	1.05	0.99	6.72	7.70	14.42
FSG 406	2.60	2.02	1.24	0.90	6.75	7.65	14.40
Somerset	2.33	2.10	1.18	0.92	6.53	7.46	13.99
6420	2.63	1.98	1.08	0.87	6.55	7.42	13.97
Gold Rush 747	2.49	1.95	1.12	0.91	6.47	7.38	13.85
420	2.46	2.03	1.06	0.91	6.46	7.36	13.82
54Q25	2.36	2.01	1.15	0.89	6.41	7.30	13.71
A 30-06	2.52	1.98	1.06	0.83	6.40	7.23	13.63
Abundance	2.43	1.95	0.99	0.96	6.33	7.29	13.62
Vernal	2.38	1.98	1.00	0.97	6.32	7.29	13.60
Extreme	2.41	1.83	1.15	0.94	6.32	7.26	13.59
FSG 351	2.48	1.91	0.99	0.95	6.32	7.26	13.58
Bullseye	2.50	1.93	1.00	0.84	6.27	7.11	13.38
54V46	2.42	1.99	1.00	0.86	6.26	7.11	13.36
FSG 505	2.52	1.92	0.91	0.85	6.20	7.04	13.24
WL 357HQ	2.39	1.97	0.93	0.88	6.16	7.04	13.21
WL 319HQ	2.43	1.93	0.96	0.84	6.15	7.00	13.14
Husky Supreme	2.50	1.90	0.88	0.84	6.11	6.95	13.06
Journey Brand 204 Hyb.	2.39	1.92	1.00	0.80	6.11	6.91	13.02
Notice II	2.38	1.86	0.99	0.85	6.07	6.93	12.99
Rebel	2.46	1.98	0.84	0.80	6.08	6.88	12.97
Rugged	2.56	1.77	0.83	0.87	6.02	6.90	12.92
4500	2.28	1.91	1.00	0.80	5.99	6.78	12.77
Hybriforce-420/Wet	2.45	1.74	0.93	0.79	5.90	6.69	12.59
Average	2.47	1.94	1.02	0.88	6.32	7.20	13.52
Maturity (Kalu & Fick)	4.0	4.0	4.9	4.7			
LSD (P=0.05)	0.24	NS	NS	NS	NS	NS	NS
CV (%)	8.5	12.6	30.9	23.2	11.8	12.8	12.3
MCV (%)	9.7						
LSR (%)	49.0						

NS = not significant at 0.05 level of probability

MCV = $LSD / \text{mean} * 100$

Treflan applied before planting

LSR = $LSD / \text{range} * 100$

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL
 Highmore, Hyde County, Central Research Farm
 Planted 28 April 2003, Randomized complete block with 6 replicates

Entry	2004				2003	2-year
	16-Jun	19-Jul	27-Aug	Total	Total	Total
	Tons DM/acre					
Released cultivars						
A 30-06	2.05	1.56	1.14	4.75	1.03	5.78
Vernal	1.89	1.56	0.93	4.39	1.09	5.48
DKA 42-15	1.83	1.44	0.92	4.19	1.07	5.26
Hybriforce 400	1.83	1.35	0.87	4.04	1.17	5.20
Alfaster II	1.74	1.28	0.91	3.93	1.18	5.11
WL 319 HQ	1.93	1.32	0.99	4.24	0.86	5.09
Journey Brand 204 Hyb.	1.82	1.35	0.86	4.03	1.04	5.07
Hybriforce 420 Wet	1.74	1.28	0.82	3.83	1.23	5.06
Notice II	1.75	1.30	0.94	4.00	1.04	5.04
Somerset	1.59	1.32	0.91	3.82	1.22	5.04
Husky Supreme	1.73	1.27	0.89	3.89	1.13	5.02
Maverick	1.71	1.30	0.86	3.87	1.05	4.92
WL 357 HQ	1.69	1.28	0.80	3.77	1.15	4.92
54V54	1.71	1.34	0.87	3.92	0.98	4.90
Gold Rush 747	1.73	1.26	0.72	3.71	1.11	4.82
Setter	1.56	1.24	0.78	3.58	1.21	4.79
Multiplier 3	1.60	1.20	0.63	3.43	1.13	4.56
FK 421	1.69	1.07	0.65	3.40	1.15	4.55
Released cultivar average	1.75	1.32	0.86	3.93	1.10	5.03
Experimental strains						
CW 04030	1.96	1.45	0.97	4.38	1.11	5.49
CW 14026	2.04	1.32	0.95	4.31	1.07	5.38
CW 94023	1.91	1.50	0.86	4.27	0.91	5.18
CW 04027	1.80	1.43	0.87	4.10	1.08	5.17
CW 03019	1.93	1.41	0.92	4.25	0.92	5.17
CW 04022	1.84	1.39	0.85	4.08	0.99	5.07
CW 83010	1.78	1.35	0.91	4.04	0.98	5.01
CW 94025	1.75	1.31	0.98	4.04	0.83	4.86
CW 93013	1.75	1.22	0.72	3.69	1.10	4.78
Experimental strain average	1.86	1.38	0.89	4.13	1.00	5.12
Average	1.79	1.34	0.87	4.00	1.07	5.06
Maturity (Kalu & Fick)	6.0	5.8	5.0			
LSD (P=0.05)	NS	NS	NS	NS	0.23	NS
CV (%)	17.9	23.5	31.9	18.6	19.2	14.0
MCV (%)					21.9	
LSR (%)					58.2	

NS = not significant at 0.05 level of probability

MCV = LSD/mean*100

Treflan applied before planting

LSR=LSD/range*100

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Watertown, Codington County, Northeast Experiment Station
Planted 3 May 2001, Randomized complete block with 6 replicates

Entries	2004				2003	2002	3-year
	14-Jun	15-Jul	27-Aug	Total	Total	Total	Total
	Tons Dry Matter/Acre						
Released cultivars							
WL 327	1.68	1.52	1.32	4.52	2.51	1.85	8.88
HybriForce-400	1.74	1.46	1.27	4.48	2.53	1.81	8.81
54V54	1.78	1.56	1.36	4.69	2.59	1.51	8.79
Monument II	1.69	1.62	1.23	4.54	2.37	1.63	8.54
Feast + EV	1.74	1.44	1.30	4.47	2.46	1.58	8.51
WL 342	1.64	1.47	1.27	4.37	2.45	1.64	8.47
Reliance	1.62	1.45	1.21	4.27	2.46	1.59	8.32
Macon	1.61	1.42	1.28	4.31	2.37	1.63	8.32
4 Traffic	1.69	1.39	1.26	4.35	2.25	1.66	8.26
Frontier 2000	1.58	1.20	1.27	4.05	2.37	1.58	7.99
Husky Supreme	1.46	1.32	1.27	4.05	2.30	1.59	7.94
GoldRush 747	1.61	1.32	1.21	4.14	2.32	1.37	7.83
Vernal	1.76	1.31	1.09	4.16	2.20	1.46	7.82
Maverick	1.54	1.22	1.21	3.96	2.36	1.47	7.78
Somerset	1.46	1.30	1.12	3.89	2.22	1.31	7.42
Grand mean	1.64	1.40	1.24	4.28	2.38	1.58	8.24
Maturity (Kalu & Fick)	5.0	4.8	5.0				
LSD (P=0.05)	0.21	0.16	NS	0.44	NS	NS	NS
CV (%)	11.0	10.1	11.4	9.0	14.4	21.9	9.9
MCV (%)	12.8	11.4		10.3			
LSR (%)	65.6	28.6		55.0			

NS = not significant at 0.05 level of probability

MCV = $LSD / \text{mean} \times 100$

LSR = $LSD / \text{range} \times 100$

50 lbs P2O5/Acre - preplant

Treflan applied preplant

2005 South Dakota Alfalfa Variety Trials
Vance N. Owens and Chris Lee, South Dakota State University

Establishment and Management

Alfalfa is planted at a rate of 18 lbs PLS acre⁻¹. Plots are 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Belle Fourche where plots are 3 feet wide and 20 feet long and consist of 5 rows with 6-inch spacings. Six replicates are planted at each location except at Belle Fourche where only 4 replicates are planted. Stage of maturity for each trial is determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2002' is the trial planted near Brookings in 2002. Included in this report are yield and cutting data for the following locations:

Location	Established	2005 cuttings
Brookings (SD Crop Improvement Farm)	2002	2
Brookings (SD Crop Improvement Farm)	2004	2
Belle Fourche (Art Walker Farm)	2005	1
Beresford (Southeast Research Station)	2003	3
Beresford (Southeast Research Station)	2005	2
Highmore (Central Research Station)	2003	2
Highmore (Central Research Station)	2005	1
Watertown (Northeast Research Station)	2004	3

2005 Results

New trials were planted at Beresford, Highmore, and Belle Fourche, SD. This is the first year a trial has been planted under irrigation in western SD (Belle Fourche). Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Adequate early season moisture provided good establishment conditions and first cut yields on established stands. However, limited mid-season precipitation reduced second cut yields at Beresford, Brookings, and Highmore. Also, due to lack of moisture for several years in parts of western SD, irrigation was unavailable until later in the season at the new Belle Fourche site, allowing us to take one cutting only in mid-August.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088
FAX: 605 688-4452
email: Vance.Owens@sdstate.edu
mailing address:
Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 1 May 2002

Experimental Design: Randomized complete block with six replicates

Entry	2005			2004	2003	3-year
	16-Jun	7-Jul	Total	Total	Total	Total
Tons DM/Acre						
Dakota	1.18	0.70	1.88	1.88	0.88	4.64
Husky	1.14	0.71	1.85	1.92	0.85	4.62
6420	1.15	0.75	1.89	1.88	0.84	4.61
Hybriforce 400	1.10	0.71	1.80	1.85	0.87	4.53
Vernal	1.18	0.74	1.91	1.86	0.72	4.50
Survivor	1.15	0.69	1.84	1.84	0.78	4.46
54H91	1.09	0.73	1.81	1.76	0.85	4.42
Frontier 2000	1.15	0.67	1.83	1.93	0.65	4.40
WL 327	1.20	0.73	1.93	1.69	0.79	4.40
DS 9809	1.12	0.73	1.84	1.74	0.81	4.39
LS 102	1.09	0.73	1.82	1.86	0.72	4.39
Triad LA	1.17	0.71	1.88	1.74	0.77	4.38
Feast +Ev	1.15	0.63	1.78	1.78	0.78	4.34
Multiplier 3	1.10	0.69	1.78	1.71	0.81	4.30
DS 211 Hyb	1.07	0.69	1.76	1.73	0.79	4.27
WL 319 HQ	1.02	0.69	1.71	1.76	0.78	4.25
GoldRush 747	1.11	0.71	1.81	1.62	0.80	4.23
54V54	1.09	0.77	1.86	1.55	0.73	4.14
Ameristand 403T	1.07	0.67	1.74	1.68	0.72	4.14
MegaTon 3.0	1.15	0.73	1.88	1.47	0.80	4.14
Setter	1.08	0.65	1.73	1.67	0.74	4.14
GH 766	1.10	0.73	1.83	1.49	0.74	4.05
A 30-06	1.09	0.67	1.76	1.47	0.74	3.97
Maverick	1.10	0.59	1.69	1.44	0.70	3.83
Average	1.12	0.70	1.82	1.72	0.78	4.32
Maturity (Kalu & Fick)	4.7	5.0				
LSD (P=0.10)	NS	0.07	NS	NS	0.10	NS
CV (%)	9.8	11.0	8.5	19.3	13.8	10.6
P-value	0.627	0.055	0.449	0.250	0.028	0.231

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 28 April 2004

Experimental Design: Randomized complete block with six replicates

Entry	2005			2004	2-year
	15-Jun	6-Jul	Total	Total	Total
	Tons DM/Acre				
54V46	1.51	1.17	2.68	1.38	4.06
6400 HT	1.55	1.11	2.66	1.39	4.05
Vernal	1.57	1.05	2.62	1.37	3.99
6415	1.50	1.14	2.63	1.33	3.97
54H91	1.48	1.03	2.51	1.42	3.93
Jade 111 NC+	1.43	1.14	2.57	1.34	3.90
Hybriforce 420/wet	1.46	1.10	2.56	1.29	3.85
Summer Gold	1.49	1.07	2.55	1.28	3.83
54Q25	1.39	1.05	2.44	1.33	3.77
WL 357HQ	1.33	1.07	2.40	1.37	3.77
Average	1.47	1.09	2.56	1.35	3.91
Maturity (Kalu & Fick)	4.6	4.7			
LSD (P=0.10)	0.12	NS	NS	NS	NS
CV (%)	8.5	11.3	9.3	6.6	6.7
P-value	0.063	0.579	0.529	0.226	0.486

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Belle Fourche, SD; Art Walker Farm; Butte County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with four replicates

Entry	22-Aug
	Tons DM/Acre
Escalade	1.72
Integrity	1.61
Mountaineer 2.0	1.58
Rebound 5.0	1.54
LegenDairy 5.0	1.52
4A421	1.51
6400 HT	1.44
Vernal	1.38
54V46	1.36
WL 357HQ	1.23
WL 335HQ	1.05
HybriForce 400	0.87
Average	1.40
Maturity (Kalu & Fick)	4.1
LSD (P=0.10)	NS
CV (%)	32.4
P-value	0.354

NS = not significant at 0.10 level of probability

75 lbs P2O5 applied preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 29 April 2003

Experimental Design: Randomized complete block with six replicates

Entry	2005				2004	2003	3-year
	31-May	29-Jun	4-Aug	Total	Total	Total	Total
Tons DM/Acre							
Alfastar II	1.88	2.20	1.20	5.29	7.12	2.53	14.94
FSG 406	1.82	2.14	1.58	5.53	6.75	2.37	14.66
6420	1.93	2.14	1.28	5.34	6.55	2.64	14.53
Evermore	2.14	2.18	0.90	5.21	6.71	2.51	14.44
Extreme	2.09	2.40	1.20	5.69	6.32	2.37	14.39
Somerset	2.00	2.27	1.18	5.45	6.53	2.34	14.32
Abundance	2.28	2.52	1.01	5.80	6.33	2.18	14.31
54V46	2.02	2.29	1.22	5.52	6.25	2.50	14.27
WL 319HQ	2.34	2.62	0.77	5.73	6.15	2.32	14.20
Rebel	2.21	2.18	1.08	5.47	6.08	2.49	14.05
A 30-06	1.98	2.15	1.02	5.14	6.40	2.47	14.01
54Q25	1.95	2.15	0.95	5.05	6.41	2.45	13.91
WL 357HQ	1.95	2.09	1.34	5.39	6.16	2.33	13.88
Husky Supreme	2.13	2.33	0.81	5.27	6.11	2.48	13.86
Gold Rush 747	1.82	2.08	1.04	4.93	6.47	2.44	13.84
FSG 351	1.84	2.20	1.01	5.06	6.32	2.33	13.70
Bullseye	1.87	2.04	0.72	4.63	6.27	2.71	13.60
420	1.79	1.98	0.97	4.75	6.46	2.35	13.56
FSG 505	1.89	2.16	1.01	5.07	6.20	2.28	13.54
Hybriforce-420/Wet	1.96	2.28	0.86	5.09	5.90	2.50	13.49
Journey 204 Hyb. Alf.	2.01	2.10	0.81	4.93	6.11	2.42	13.46
Rugged	1.84	1.96	0.92	4.72	6.02	2.60	13.35
Vernal	1.97	1.98	0.59	4.54	6.32	2.44	13.30
4500	1.98	2.11	0.83	4.92	5.99	2.23	13.14
Notice II	1.85	2.09	0.84	4.79	6.07	2.20	13.06
Average	1.98	2.12	1.00	5.17	6.32	2.42	13.91
Maturity (Kalu & Fick)	4.8	5.6	5.5				
LSD (P=0.10)	NS	0.28	NS	NS	NS	NS	NS
CV (%)	16.6	13.3	56.9	15.9	11.8	12.3	10.8
P-value	0.286	0.023	0.622	0.368	0.714	0.285	0.884

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 2 May 2005

Experimental Design: Randomized complete block with six replicates

Entry	2005		Total
	14-Jul	26-Aug	
	Tons DM/Acre		
6400 HT	0.85	0.75	1.61
4S419	0.71	0.80	1.51
54V46	0.80	0.69	1.49
FSG 408DP	0.77	0.66	1.43
Meadowlark	0.73	0.68	1.41
54H91	0.91	0.47	1.38
6415	0.80	0.56	1.36
Genoa	0.67	0.67	1.34
WL 357HQ	0.79	0.53	1.32
Escalade	0.67	0.64	1.31
Vernal	0.72	0.58	1.31
Integrity	0.85	0.44	1.29
Marvel	0.83	0.45	1.29
361 HY	0.64	0.47	1.11
4A421	0.69	0.41	1.09
Average	0.76	0.59	1.35
Maturity (Kalu & Fick)	5.3	5.5	
LSD (P=0.10)	NS	0.16	0.25
CV (%)	20.5	29.3	19.3
P-value	0.132	0.001	0.098

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 28 April 2003

Experimental Design: Randomized complete block with six replicates

Entry	2005			2004	2003	3-year
	16-Jun	11-Jul	Total	Total	Total	Total
Tons DM/acre						
Released cultivars						
A 30-06	1.69	1.27	2.96	4.75	1.03	8.75
DKA 42-15	1.65	1.42	3.07	4.18	1.07	8.33
Hybriforce 400	1.71	1.27	2.98	4.04	1.17	8.18
Vernal	1.63	1.35	2.97	4.19	0.93	8.09
WL 319HQ	1.56	1.43	2.98	4.24	0.86	8.08
Journey Brand 204 Hyb.	1.66	1.29	2.95	4.03	1.04	8.02
Somerset	1.66	1.31	2.97	3.82	1.22	8.01
Hybriforce 420 Wet	1.58	1.33	2.91	3.83	1.23	7.97
WL 357HQ	1.67	1.37	3.03	3.77	1.15	7.96
Maverick	1.52	1.45	2.96	3.87	1.05	7.89
Notice II	1.53	1.32	2.85	3.99	1.04	7.89
Husky Supreme	1.51	1.28	2.79	3.89	1.13	7.82
54V54	1.56	1.33	2.90	3.92	0.98	7.80
Alfastar II	1.42	1.03	2.45	3.93	1.18	7.56
Gold Rush 747	1.43	1.24	2.67	3.71	1.11	7.48
Setter	1.44	1.21	2.64	3.58	1.21	7.43
FK 421	1.39	1.07	2.46	3.40	1.15	7.01
Multiplier 3	1.31	1.07	2.38	3.43	1.13	6.94
<i>Released cultivar average</i>	<i>1.55</i>	<i>1.28</i>	<i>2.83</i>	<i>3.92</i>	<i>1.09</i>	<i>7.85</i>
Experimental strains						
CW 04030	1.65	1.50	3.15	4.38	1.11	8.63
CW 14026	1.66	1.44	3.09	4.31	1.07	8.47
CW 04022	1.61	1.44	3.05	4.08	0.99	8.12
CW 83010	1.58	1.37	2.95	4.04	0.98	7.96
CW 04027	1.43	1.33	2.75	4.09	1.08	7.92
CW 03019	1.55	1.18	2.73	4.25	0.91	7.90
CW 94023	1.52	1.14	2.66	4.26	0.91	7.84
CW 94025	1.65	1.31	2.96	4.04	0.83	7.82
CW 93013	1.47	1.10	2.57	3.69	1.10	7.36
<i>Experimental strain average</i>	<i>1.57</i>	<i>1.31</i>	<i>2.88</i>	<i>4.13</i>	<i>1.00</i>	<i>8.00</i>
Overall average	1.56	1.29	2.85	3.99	1.06	7.90
Maturity (Kalu & Fick)	5.3	6.3				
LSD (P=0.10)	NS	0.23	0.39	NS	0.20	NS
CV (%)	15.2	19.0	14.4	18.5	19.6	11.8
P-value	0.254	0.044	0.053	0.526	0.037	0.247

NS = not significant at 0.10 level of probability

Treflan applied pre-planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with six replicates

Entry	2005
	11-Jul
Tons DM/Acre	
Mountaineer 2.0	1.68
Labrador	1.64
6400 HT	1.61
4A421	1.57
Vernal	1.57
361 HY	1.56
Rebound 5.0	1.55
LegenDairy 5.0	1.43
54V46	1.32
WL 335HQ	1.23
Integrity	1.22
Average	1.49
Maturity (Kalu & Fick)	6.5
LSD (P=0.05)	NS
CV (%)	29.0
P-value	0.567

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 28 April 2004

Experimental Design: Randomized complete block with six replicates

Entries	2005			
	22-Jun	18-Jul	22-Aug	Total
	Tons Dry Matter/Acre			
6200 HT	2.51	1.77	1.08	5.37
WL 319HQ	2.44	1.78	1.12	5.35
eXtreme	2.46	1.77	1.07	5.31
54Q25	2.52	1.68	1.05	5.24
ProSeed-381 Hyb	2.50	1.67	1.07	5.24
54H91	2.54	1.67	0.98	5.19
HybriForce 420/wet	2.54	1.64	1.01	5.19
WL 348AP	2.40	1.69	1.02	5.10
54V46	2.25	1.65	1.11	5.00
GH 711	2.22	1.76	1.01	4.99
6415	2.24	1.67	1.06	4.97
Vernal	2.50	1.51	0.95	4.96
Average	2.43	1.69	1.04	5.16
Maturity (Kalu & Fick)	5.8	5.3	4.7	
LSD (P=0.10)	NS	NS	NS	NS
CV (%)	11.1	10.3	18.5	11.1
P-value	0.289	0.326	0.944	0.942

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

Treflan applied preplant

2006 South Dakota Alfalfa Variety Trials
Vance N. Owens, Chris Lee, and Peter Jeranyama
South Dakota State University

Establishment and Management

Alfalfa is planted at a rate of 18 lbs PLS acre⁻¹. Plots are 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Belle Fourche where plots are 3 feet wide and 20 feet long and consist of 5 rows with 6-inch spacings. Six replicates are planted at each location except at Belle Fourche where only 4 replicates are planted. Stage of maturity for each trial is determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides are used as needed to successfully establish and manage alfalfa pests. Soil fertility is maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2006' is the trial planted near Brookings in 2006. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	No. of cuttings
Brookings (SD Crop Improvement Farm, Irrigated)	2006	3
Bell Fourche (Art Walker Farm, Irrigated)	2005	3
Beresford (Southeast Research Station)	2003	3
Beresford (Southeast Research Station)	2005	3
Highmore (Central Research Station)	2003	1
Highmore (Central Research Station)	2005	1
Watertown (Northeast Research Station)	2004	3

2006 Results

New trials were planted at Brookings and Watertown, SD. This is the first year a trial has been planted under irrigation at the Brookings location and this enabled us to harvest three cutting in the seeding year. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Adequate early season moisture provided good establishment conditions and first cut yields on established stands. However, limited mid-season precipitation reduced third cut yields at Beresford and limited us to one cutting at Highmore. The trial planted in 2004 at Brookings suffered severe winter injury and death due to ice, thus yields were not taken from this location.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088
FAX: 605 688-4452
email: Vance.Owens@sdstate.edu
mailing address:
Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 29 April 2006

Experimental Design: Randomized complete block with five replicates

Irrigated Trial

Entry	2006			
	7-Jul	4-Aug	1-Sep	Total
	Tons DM/Acre			
Mustang 420	1.46	1.77	0.84	4.06
6415	1.48	1.69	0.88	4.06
4A421	1.45	1.67	0.94	4.05
TS 4027	1.44	1.70	0.89	4.03
Meadowlark	1.45	1.68	0.87	4.00
54V46	1.35	1.73	0.89	3.97
Bob White	1.38	1.68	0.89	3.95
Oriole	1.51	1.61	0.83	3.95
6443 RR	1.26	1.81	0.82	3.90
53Q30	1.38	1.68	0.82	3.88
Melton	1.48	1.63	0.77	3.87
DKA 41-18RR	1.31	1.67	0.83	3.82
WL 355	1.26	1.70	0.83	3.79
Genoa	1.25	1.65	0.89	3.78
DKA 34-17RR	1.32	1.65	0.81	3.78
4G418 RR	1.26	1.68	0.83	3.77
Blue Bird HR	1.33	1.59	0.83	3.74
Shaw	1.29	1.62	0.82	3.73
Vernal	1.38	1.60	0.74	3.71
A4440	1.38	1.48	0.80	3.66
WL 343	1.20	1.59	0.81	3.59
Average	1.36	1.66	0.84	3.86
Maturity (Kalu & Fick)	4.2	3.4	3.3	
LSD (P=0.10)	0.16	NS	0.08	NS
CV (%)	11.0	8.3	9.5	7.3
P-value	0.031	0.214	0.050	0.261

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Belle Fourche, SD; Art Walker Farm; Butte County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2006				2005	2-year
	31-May	25-Jul	29-Aug	Total	Total	Total
	Tons DM/Acre					
Escalade	1.68	2.88	1.50	6.05	1.72	7.77
Mountaineer 2.0	1.76	2.75	1.46	5.97	1.58	7.54
6400 HT	1.70	2.72	1.46	5.88	1.44	7.32
Rebound 5.0	1.77	2.15	1.26	5.18	1.54	6.72
LegenDairy 5.0	1.50	2.36	1.24	5.11	1.52	6.62
4A421	1.67	2.12	1.27	5.06	1.51	6.57
Integrity	1.63	2.08	1.14	4.84	1.61	6.45
WL 357HQ	1.58	1.94	1.17	4.68	1.23	5.91
Vernal	1.52	1.61	1.23	4.36	1.38	5.74
54V46	1.49	1.80	1.01	4.30	1.36	5.66
WL 335HQ	1.40	1.75	1.02	4.17	1.05	5.22
HybriForce 400	1.42	1.35	1.00	3.77	0.87	4.63
Average	1.59	2.13	1.23	4.95	1.40	6.35
Maturity (Kalu & Fick)	4.2	6.6	3.9			
LSD (P=0.10)	NS	NS	NS	NS	NS	NS
CV (%)	14.2	49.3	27.6	30.7	32.4	30.4
P-value	0.296	0.608	0.394	0.502	0.353	0.492

NS = not significant at 0.10 level of probability

75 lbs P2O5 applied preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 29 April 2003

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2006				2005	2004	2003	4-year
	18-May	17-Jun	12-Jul	Total	Total	Total	Total	Total
	Tons DM/Acre							
FSG 406	2.12	1.59	0.52	4.22	5.53	6.75	2.37	18.88
6420	2.27	1.45	0.51	4.23	5.34	6.55	2.64	18.76
Alfastar II	1.99	1.33	0.47	3.80	5.29	7.12	2.53	18.73
54V46	2.29	1.40	0.44	4.13	5.52	6.25	2.50	18.40
Abundance	2.47	1.09	0.33	3.89	5.80	6.33	2.18	18.20
Somerset	2.12	1.28	0.41	3.80	5.45	6.53	2.34	18.13
Extreme	2.20	1.13	0.40	3.73	5.69	6.32	2.37	18.12
Evermore	2.17	1.03	0.26	3.46	5.21	6.71	2.51	17.90
Rebel	2.13	1.29	0.40	3.83	5.47	6.08	2.49	17.87
FSG 351	2.19	1.30	0.40	3.90	5.06	6.32	2.33	17.60
WL 319HQ	2.32	0.86	0.20	3.38	5.73	6.15	2.32	17.58
54Q25	2.08	1.10	0.34	3.53	5.05	6.41	2.45	17.43
A 30-06	2.07	1.09	0.24	3.40	5.14	6.40	2.47	17.41
Husky Supreme	2.20	1.02	0.26	3.48	5.27	6.11	2.48	17.34
WL 357HQ	2.16	0.98	0.27	3.41	5.39	6.16	2.33	17.29
Gold Rush 747	2.13	1.05	0.25	3.43	4.93	6.47	2.44	17.27
420	2.06	1.26	0.35	3.67	4.75	6.46	2.35	17.23
FSG 505	2.11	1.19	0.31	3.60	5.07	6.20	2.28	17.15
Hybriforce-420/Wet	2.19	1.11	0.30	3.60	5.09	5.90	2.50	17.09
Rugged	1.98	1.17	0.37	3.52	4.72	6.02	2.60	16.87
Journey 204 Hyb. Alf.	2.11	0.98	0.30	3.39	4.93	6.11	2.42	16.84
Bullseye	1.95	0.89	0.22	3.06	4.63	6.27	2.71	16.66
Notice II	2.23	1.01	0.25	3.49	4.79	6.07	2.20	16.55
4500	1.90	1.01	0.29	3.19	4.92	5.99	2.23	16.33
Vernal	1.90	0.92	0.18	3.00	4.54	6.32	2.44	16.30
Average	2.13	1.14	0.33	3.61	5.17	6.32	2.42	17.52
Maturity (Kalu & Fick)								
LSD (P=0.10)	0.22	0.33	NS	0.57	NS	NS	NS	NS
CV (%)	10.9	30.1	60.8	16.5	15.9	11.8	12.3	11.1
P-value	0.010	0.033	0.163	0.028	0.368	0.714	0.285	0.648

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 2 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2006				2005	2-year
	18-May	17-Jun	12-Jul	Total	Total	Total
	Tons DM/Acre					
4S419	2.59	1.82	0.95	5.36	1.51	6.87
6400 HT	2.43	1.71	0.93	5.08	1.61	6.68
Genoa	2.38	1.78	1.00	5.16	1.34	6.51
54V46	2.31	1.73	0.95	5.00	1.49	6.49
Meadowlark	2.43	1.71	0.88	5.02	1.41	6.43
FSG 408DP	2.38	1.73	0.82	4.93	1.43	6.36
Marvel	2.31	1.78	0.91	5.01	1.29	6.29
Integrity	2.35	1.78	0.86	4.99	1.29	6.28
WL 357HQ	2.32	1.63	0.95	4.91	1.32	6.23
6415	2.24	1.68	0.88	4.80	1.36	6.16
4A421	2.35	1.68	0.92	4.94	1.09	6.03
Escalade	2.29	1.58	0.85	4.71	1.31	6.02
Vernal	2.45	1.49	0.76	4.70	1.31	6.00
361 HY	2.43	1.60	0.83	4.87	1.11	5.98
54H91	2.47	1.42	0.70	4.58	1.38	5.97
Average	2.38	1.67	0.88	4.94	1.35	6.29
Maturity (Kalu & Fick)	3.4	4.2	4.4			
LSD (P=0.10)	NS	0.21	0.13	NS	0.25	NS
CV (%)	8.4	13.1	14.9	9.2	19.3	10.4
P-value	0.332	0.097	0.013	0.376	0.098	0.414

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 28 April 2003

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2006 31-May	2005 Total	2004 Total	2003 Total	4-year Total
Tons DM/acre					
Released cultivars					
A 30-06	2.08	2.96	4.75	1.03	10.82
DKA 42-15	1.91	3.07	4.18	1.07	10.23
WL 319 HQ	1.81	2.98	4.24	0.86	9.89
Hybriforce 400	1.69	2.98	4.04	1.17	9.87
Hybriforce 420 Wet	1.90	2.91	3.83	1.23	9.87
Vernal	1.73	2.97	4.19	0.93	9.82
Journey Brand 204 Hyb.	1.78	2.95	4.03	1.04	9.79
Notice II	1.68	2.85	3.99	1.04	9.56
Somerset	1.54	2.97	3.82	1.22	9.54
Husky Supreme	1.71	2.79	3.89	1.13	9.53
54V54	1.70	2.90	3.92	0.98	9.49
WL 357 HQ	1.44	3.03	3.77	1.15	9.39
Maverick	1.40	2.96	3.87	1.05	9.28
Setter	1.46	2.64	3.58	1.21	8.89
Alfatar II	1.24	2.45	3.93	1.18	8.80
Gold Rush 747	1.17	2.67	3.71	1.11	8.66
Multiplier 3	1.65	2.38	3.43	1.13	8.59
FK 421	1.16	2.46	3.40	1.15	8.17
Average	1.61	2.83	3.92	1.09	9.46
Maturity (Kalu & Fick)	4.4				
LSD (P=0.10)	NS	0.20	NS	NS	NS
CV (%)	39.9	14.7	19.9	19.7	15.5
P-value	0.506	0.075	0.499	0.194	0.312

Experimental strains

CW 04030	1.89	3.15	4.38	1.11	10.52
CW 14026	1.87	3.09	4.31	1.07	10.34
CW 04022	2.05	3.05	4.08	0.99	10.17
CW 94025	1.91	2.96	4.04	0.83	9.73
CW 83010	1.64	2.95	4.04	0.98	9.60
CW 04027	1.64	2.75	4.09	1.08	9.56
CW 03019	1.45	2.73	4.25	0.91	9.34
CW 94023	1.46	2.66	4.26	0.91	9.29
CW 93013	1.14	2.57	3.69	1.10	8.50
Average	1.67	2.88	4.13	1.00	9.67
Maturity (Kalu & Fick)	4.4				
LSD (P=0.10)	NS	NS	NS	NS	NS
CV (%)	34.2	14.5	16.3	20.2	13.7
P-value	0.179	0.202	0.797	0.216	0.265

NS = not significant at 0.10 level of probability

Treflan applied pre-planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2006 31-May	2005 Total	2-year Total
Tons DM/Acre			
361 HY	2.26	1.56	3.81
Mountaineer 2.0	1.99	1.68	3.67
6400 HT	2.02	1.61	3.64
Vernal	2.05	1.57	3.62
Labrador	1.97	1.64	3.61
4A421	2.02	1.57	3.59
Rebound 5.0	1.83	1.55	3.38
54V46	1.96	1.32	3.28
LegenDairy 5.0	1.79	1.43	3.21
Integrity	1.83	1.22	3.05
WL 335HQ	1.80	1.23	3.03
Average	1.94	1.51	3.44
Maturity (Kalu & Fick)	4.2		
LSD (P=0.05)	NS	NS	NS
CV (%)	17.7	27.9	16.9
P-value	0.356	0.466	0.348

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 28 April 2004

Experimental Design: Randomized complete block with six replicates

Dryland Trial

	2006				2005	2-year
	8-Jun	8-Jul	11-Aug	Total	Total	Total
	Tons Dry Matter/Acre					
6200 HT	2.19	1.32	0.81	4.32	5.37	9.69
54Q25	2.15	1.26	0.83	4.24	5.24	9.47
WL 319HQ	2.07	1.28	0.76	4.12	5.35	9.46
54H91	2.28	1.29	0.65	4.21	5.19	9.40
54V46	2.06	1.41	0.86	4.34	5.00	9.34
ProSeed-381 Hyb	1.98	1.28	0.77	4.03	5.24	9.27
eXtreme	2.00	1.16	0.77	3.93	5.31	9.23
HybriForce 420/wet	2.03	1.24	0.70	3.98	5.19	9.17
WL 348AP	2.03	1.27	0.68	3.99	5.10	9.09
6415	1.93	1.26	0.74	3.93	4.97	8.90
Vernal	2.05	1.14	0.62	3.81	4.96	8.77
GH 711	1.86	1.17	0.64	3.67	4.99	8.67
Average	2.05	1.26	0.74	4.05	5.16	9.20
Maturity (Kalu & Fick)	5.1	3.9	5.1			
LSD (P=0.10)	NS	NS	NS	NS	NS	NS
CV (%)	16.0	16.4	28.6	16.6	11.1	13.0
P-value	0.717	0.645	0.602	0.850	0.942	0.955

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

Treflan applied preplant

2007 South Dakota Alfalfa Variety Trials
Vance N. Owens, Chris Lee, and Peter Jeranyama
South Dakota State University

Establishment and Management

Alfalfa was planted at a rate of 18 lbs PLS acre⁻¹. Plots were 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Vale where plots were 3 feet wide and 20 feet long and consisted of 5 rows with 6-inch spacings. Six replicates were planted at each location except at Vale where only 4 replicates were planted. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides were used as needed to successfully establish and manage alfalfa pests. Soil fertility was maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2006' is the trial planted near Brookings in 2006. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	No. of cuttings
Brookings (SD Crop Improvement Farm; Irrigated)	2006	4
Beresford (Southeast Research Station; Dryland)	2005	4
Highmore (Central Research Station; Dryland)	2005	3
Highmore (Central Research Station; Dryland)	2007	1
Vale (Keith Dunn Farm; Irrigated)	2007	2
Watertown (Northeast Research Station; Dryland)	2004	4

2007 Results

New trials were planted near Beresford, Highmore, and Vale, SD. The trial at Vale in western SD is irrigated while the other two are dryland trials. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Adequate early season moisture provided good establishment conditions and first cut yields on established stands. However, limited mid-season precipitation reduced third cut yields at Beresford and prohibited us from taking a cutting from the new Beresford trial.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088
FAX: 605 688-4452
email: Vance.Owens@sdstate.edu
mailing address:
Plant Science Department
South Dakota State University
NPB 247, Box 2140-C
Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 29 April 2006

Experimental Design: Randomized complete block with five replicates

Irrigated Trial

Entry	2007					2006	2-year
	31-May	29-Jun	30-Jul	10-Sep	Total	Total	Total
	Tons DM/Acre						
TS 4027	1.58	2.06	1.12	1.23	5.99	4.03	10.02
6415	1.62	1.94	1.01	1.36	5.94	4.06	9.99
54V46	1.59	1.96	1.14	1.23	5.91	3.97	9.87
4A421	1.59	1.90	0.95	1.34	5.78	4.05	9.84
Mustang 420	1.58	1.90	0.98	1.24	5.70	4.06	9.77
DKA 41-18RR	1.44	2.06	1.12	1.19	5.81	3.82	9.63
WL 355	1.57	1.91	1.13	1.21	5.82	3.79	9.61
Oriole	1.53	1.87	0.93	1.22	5.54	3.95	9.49
Meadowlark	1.40	1.86	0.97	1.26	5.48	4.00	9.48
53Q30	1.50	1.88	0.95	1.24	5.56	3.88	9.44
4G418 RR	1.41	1.91	1.06	1.27	5.66	3.77	9.43
Bob White	1.39	1.88	1.02	1.17	5.46	3.95	9.41
WL 343	1.57	1.97	1.06	1.22	5.81	3.59	9.41
A4440	1.62	1.90	0.97	1.21	5.69	3.66	9.35
Genoa	1.41	1.87	1.12	1.13	5.53	3.78	9.31
DKA 34-17RR	1.54	1.87	0.88	1.17	5.47	3.78	9.25
Melton	1.54	1.70	0.88	1.12	5.24	3.87	9.10
6443 RR	1.35	1.61	1.00	1.11	5.06	3.90	8.95
Vernal	1.43	1.73	0.76	1.18	5.09	3.71	8.80
Shaw	1.42	1.66	0.76	1.15	4.98	3.73	8.71
Blue Bird HR	1.21	1.58	0.84	1.02	4.66	3.74	8.40
Average	1.49	1.86	0.98	1.20	5.53	3.86	9.39
Maturity (Kalu & Fick)	3.8	5.1	4.1	4.9			
LSD (P=0.10)	0.14	0.20	0.18	0.10	0.37	NS	0.55
CV (%)	8.8	10.4	16.9	8.0	6.4	7.3	5.6
P-value	<0.0001	0.005	0.003	0.0001	<0.0001	0.261	<0.0001

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 2 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2007					2006	2005	3-year
	26-May	27-Jun	1 Aug.	12-Sep	Total	Total	Total	Total
	Tons DM/Acre							
4S419	2.02	1.84	0.69	0.68	5.22	5.36	1.51	12.10
6400 HT	2.11	1.75	0.81	0.71	5.38	5.08	1.61	12.06
Genoa	1.95	1.94	0.86	0.69	5.44	5.16	1.34	11.95
54V46	1.93	1.73	0.66	0.61	4.93	5.00	1.49	11.42
Integrity	2.16	1.69	0.48	0.56	4.89	4.99	1.29	11.17
Meadowlark	1.87	1.63	0.58	0.62	4.69	5.02	1.41	11.12
6415	1.92	1.83	0.55	0.53	4.83	4.80	1.36	10.99
WL 357HQ	1.91	1.78	0.56	0.51	4.76	4.91	1.32	10.99
FSG 408DP	1.86	1.59	0.50	0.66	4.61	4.93	1.43	10.97
Marvel	1.90	1.76	0.50	0.51	4.67	5.01	1.29	10.96
4A421	1.82	1.75	0.42	0.48	4.46	4.94	1.09	10.50
Escalade	1.88	1.59	0.45	0.55	4.46	4.71	1.31	10.48
361 HY	1.95	1.62	0.33	0.47	4.38	4.87	1.11	10.36
Vernal	2.03	1.38	0.33	0.53	4.27	4.70	1.31	10.27
54H91	1.74	1.47	0.46	0.48	4.16	4.58	1.38	10.12
Average	1.94	1.69	0.54	0.57	4.74	4.94	1.35	11.03
Maturity (Kalu & Fick)	3.7	5.1	5.8	5.1				
LSD (P=0.10)	NS	NS	NS	0.15	NS	NS	0.25	NS
CV (%)	12.1	17.5	59.7	26.9	18.4	9.2	19.3	13.2
P-value	0.261	0.145	0.193	0.074	0.325	0.376	0.098	0.335

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2007				2006	2005	3-year
	4-Jun	3-Jul	5-Sep	Total	Total	Total	Total
	Tons DM/Acre						
361 HY	2.70	1.32	1.33	5.36	2.26	1.56	9.17
6400 HT	2.69	1.39	1.30	5.38	2.02	1.61	9.01
4A421	2.44	1.32	1.15	4.91	2.02	1.57	8.50
Labrador	2.52	1.25	1.06	4.84	1.97	1.64	8.45
Mountaineer 2.0	2.29	1.25	1.09	4.63	1.99	1.68	8.29
54V46	2.48	1.25	1.11	4.84	1.96	1.32	8.13
Rebound 5.0	2.39	1.13	1.02	4.54	1.83	1.55	7.91
Vernal	2.51	1.06	0.88	4.45	1.72	1.73	7.90
WL 335HQ	2.50	1.17	1.05	4.72	1.80	1.23	7.75
LegenDairy 5.0	2.23	1.08	1.01	4.32	1.79	1.43	7.53
Integrity	2.30	1.00	0.97	4.28	1.83	1.22	7.32
Average	2.47	1.21	1.10	4.79	1.94	1.51	8.24
Maturity (Kalu & Fick)	5.2	5.6	4.2				
LSD (P=0.10)	NS	NS	0.20	NS	NS	NS	NS
CV (%)	15.3	20.0	18.9	15.7	17.7	27.9	14.6
P-value	0.415	0.128	0.013	0.139	0.356	0.466	0.181

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 26 April 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2007
	5-Sep
Tons DM/acre	
6200HT	1.46
6417	1.60
FSG 351	1.50
FSG 408DP	1.32
Genoa	1.58
Lander	1.50
Phirst	1.43
Vernal	1.53
WL 343HQ	1.37
Average	1.40
Maturity (Kalu & Fick)	5.2
LSD (P=0.10)	NS
CV (%)	13.4
P-value	0.260

NS = not significant at 0.10 level of probability

Treflan applied pre-planting 50 lbs P2O5/Acre - preplant

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SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 27 April 2007

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2007		
	8-Aug	18-Sep	Total
	Tons DM/acre		
AmeriStand 407 TQ	2.89	2.16	5.04
WL 343HQ	2.86	2.06	4.92
54V09	2.64	2.09	4.73
6417	2.51	2.18	4.69
Phirst	2.66	2.02	4.68
55V48	2.52	2.04	4.56
Lander	2.35	1.78	4.13
TS4027	2.24	1.87	4.10
FSG 5285F	2.15	1.78	3.93
520 BR	2.16	1.75	3.90
TS4007	2.03	1.78	3.82
Vernal	1.28	1.07	2.35
Average	2.35	1.88	4.24
Maturity (Kalu & Fick)	4.8	4.9	
LSD (P=0.10)	0.49	0.38	0.80
CV (%)	17.5	17.0	16.1
P-value	0.0004	0.003	0.0003

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 28 April 2004

Experimental Design: Randomized complete block with six replicates

Dryland Trial

	2007					2006	2005	3-year
	5-Jun	5-Jul	7-Aug	14-Sep	Total	Total	Total	Total
	Tons DM/Acre							
6200 HT	2.12	1.26	1.31	0.52	5.20	4.32	5.37	14.89
54H91	2.36	1.28	1.29	0.53	5.46	4.21	5.19	14.86
54Q25	1.98	1.23	1.31	0.58	5.11	4.24	5.24	14.59
54V46	1.87	1.24	1.37	0.61	5.09	4.34	5.00	14.43
WL 319HQ	1.81	1.22	1.29	0.55	4.87	4.12	5.35	14.34
eXtreme	1.93	1.17	1.32	0.57	4.98	3.93	5.31	14.21
6415	1.95	1.29	1.42	0.64	5.29	3.93	4.97	14.20
WL 348AP	2.02	1.19	1.26	0.57	5.03	3.99	5.10	14.12
HybriForce 420/wet	1.86	1.16	1.29	0.54	4.84	3.98	5.19	14.01
ProSeed-381 Hyb	1.71	1.10	1.25	0.54	4.59	4.03	5.24	13.86
Vernal	1.98	1.15	1.14	0.49	4.77	3.81	4.96	13.54
GH 711	1.75	1.10	1.20	0.51	4.57	3.67	4.99	13.23
Average	1.94	1.20	1.29	0.55	4.98	4.05	5.16	14.19
Maturity (Kalu & Fick)	4.3	5.2	5.2	4.9				
LSD (P=0.10)	NS	NS	NS	NS	NS	NS	NS	NS
CV (%)	17.4	12.7	11.8	20.6	12.6	16.6	11.1	11.8
P-value	0.122	0.405	0.233	0.637	0.381	0.850	0.942	0.882

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

Treflan applied preplant

2008 South Dakota Alfalfa Variety Trials
Vance N. Owens and Chris Lee
South Dakota State University

Establishment and Management

Alfalfa was planted at a rate of 18 lbs PLS acre⁻¹. Plots were 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Vale where plots were 3 feet wide and 20 feet long and consisted of 5 rows with 6-inch spacings. Six replicates were planted at each location except at Vale where four replicates were planted. Five replicates are used for calculating yields at the Brookings 2006 trial due to loss of one rep. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides were used as needed to successfully establish and manage alfalfa pests. Soil fertility was maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2006' is the trial planted near Brookings in 2006. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	No. of cuttings
Brookings (SD Crop Improvement Farm; Irrigated)	2006	3
Beresford (Southeast Research Station; Dryland)	2005	4
Beresford (Southeast Research Station; Dryland)	2007	3
Highmore (Central Research Station; Dryland)	2005	3
Highmore (Central Research Station; Dryland)	2007	3
Vale (Keith Dunn Farm; Irrigated)	2007	3
Watertown (Northeast Research Station; Dryland)	2006	3

2008 Results

New trials were planted near Aurora and Watertown, SD. Aurora is an irrigated trial and Watertown is a dryland trial. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Late spring moisture delayed first cutting beyond the normal time at all locations. Yields were very good at all locations in 2008. A late fourth cutting was taken at the Beresford 2005 site since this was its last production year.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088

FAX: 605 688-4452

email: Vance.Owens@sdstate.edu

mailing address:

Plant Science Department

South Dakota State University

NPB 247, Box 2140-C

Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 29 April 2006

Experimental Design: Randomized complete block with five replicates

Irrigated Trial

Entry	2008				2007	2006	3-year
	13-Jun	10-Jul	13 Aug.	Total	Total	Total	Total
	Tons DM/Acre						
6415	2.10	1.61	1.25	4.96	5.94	4.06	14.95
TS 4027	1.92	1.63	1.23	4.78	5.99	4.03	14.80
4A421	2.05	1.60	1.21	4.86	5.78	4.05	14.70
54U46	1.86	1.70	1.17	4.74	5.91	3.97	14.61
DKA 41-18RR	1.91	1.72	1.15	4.78	5.81	3.82	14.41
WL 355	1.90	1.72	1.16	4.78	5.82	3.79	14.39
WL 343	2.09	1.67	1.17	4.93	5.81	3.59	14.34
Mustang 420	1.92	1.50	1.07	4.49	5.70	4.06	14.26
Bob White	1.86	1.69	1.26	4.82	5.46	3.95	14.23
A4440	2.13	1.51	1.22	4.86	5.69	3.66	14.21
Genoa	1.87	1.72	1.30	4.88	5.53	3.78	14.20
Meadowlark	1.91	1.60	1.11	4.62	5.48	4.00	14.11
53Q30	1.92	1.55	1.07	4.54	5.56	3.88	13.99
4G418 RR	1.84	1.49	1.20	4.52	5.66	3.77	13.95
Oriole	1.84	1.46	1.13	4.44	5.54	3.95	13.93
DKA 34-17RR	1.95	1.62	1.11	4.68	5.47	3.78	13.92
6443 RR	1.87	1.64	1.20	4.72	5.06	3.90	13.67
Melton	1.86	1.40	1.11	4.37	5.24	3.87	13.47
Vernal	1.64	1.23	1.02	3.89	5.09	3.71	12.69
Shaw	1.61	1.22	1.00	3.83	4.98	3.73	12.54
Blue Bird HR	1.57	1.23	0.99	3.78	4.66	3.74	12.19
Average	1.89	1.55	1.15	4.58	5.53	3.86	13.98
Maturity (Kalu & Fick)	4.0	4.2	4.7				
LSD (P=0.10)	0.17	0.17	NS	0.30	0.37	NS	0.68
CV (%)	9.4	11.1	13.8	6.8	6.4	7.3	5.0
P-value	<0.0001	<0.0001	0.117	<0.0001	<0.0001	0.261	<0.0001

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 2 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2008					2007	2006	2005	4-year
	16-Jun	15-Jul	11-Aug	4-Oct	Total	Total	Total	Total	Total
	Tons DM/Acre								
4S419	4.08	2.81	1.24	0.61	8.74	5.22	5.36	1.51	20.83
Genoa	4.04	2.91	1.20	0.51	8.65	5.44	5.16	1.34	20.60
6400 HT	4.15	2.45	1.12	0.51	8.23	5.38	5.08	1.61	20.29
54V46	3.91	2.47	1.11	0.38	7.86	4.93	5.00	1.49	19.28
FSG 408DP	3.93	2.48	1.15	0.47	8.02	4.61	4.93	1.43	19.00
WL 357HQ	3.75	2.69	1.01	0.41	7.85	4.77	4.91	1.32	18.85
6415	3.89	2.58	0.96	0.39	7.82	4.83	4.80	1.36	18.80
Marvel	3.93	2.54	1.03	0.34	7.84	4.67	5.01	1.29	18.80
Integrity	3.96	2.31	0.99	0.34	7.60	4.89	4.99	1.29	18.77
Meadowlark	3.75	2.33	1.03	0.44	7.55	4.69	5.02	1.41	18.67
4A421	3.76	2.58	1.05	0.39	7.77	4.46	4.94	1.09	18.27
Escalade	3.64	2.47	1.11	0.47	7.69	4.46	4.71	1.31	18.18
361 HY	3.89	2.20	0.92	0.34	7.34	4.38	4.87	1.11	17.70
Vernal	3.79	2.11	0.88	0.32	7.08	4.27	4.70	1.31	17.36
54H91	3.79	2.05	0.81	0.35	6.98	4.16	4.58	1.38	17.11
Average	3.88	1.46	1.04	0.42	7.80	4.74	4.94	1.35	18.83
Maturity (Kalu & Fick)	5.1	4.9	4.5	4.1					
LSD (P=0.10)	NS	0.30	NS	0.14	0.84	NS	NS	0.25	NS
CV (%)	7.9	12.8	22.6	35.0	11.1	18.4	9.2	19.3	12.0
P-value	0.2563	0.0002	0.1219	0.0364	0.0403	0.3250	0.3760	0.0980	0.1773

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Variety	2008			Total
	16-Jun	15-Jul	11-Aug	
	Tons DM/A			
Ameristand 407TQ	4.93	3.07	1.49	9.49
Spring Gold	4.56	3.21	1.61	9.38
FSG 528SF	4.69	3.09	1.51	9.28
WL 343HQ	4.70	2.88	1.49	9.07
55V48	4.58	3.02	1.47	9.05
6417	4.62	2.96	1.45	9.03
Vernal	4.43	3.04	1.55	9.01
FSG 400LH	4.56	2.99	1.45	9.00
Average	4.70	3.05	1.52	9.27
Maturity (Kalu & Fick)	4.7	4.8	4.6	
LSD (P=0.10)	NS	NS	NS	NS
CV (%)	13.4	7.6	10.2	8.4
P-value	0.4740	0.4858	0.2694	0.3405

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 3 May 2005

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2008				2007	2006	2005	4-year
	12-Jun	9-Jul	14-Aug	Total	Total	Total	Total	Total
	Tons DM/Acre							
361 HY	2.47	1.23	0.74	4.44	5.36	2.26	1.56	13.61
6400 HT	2.49	1.35	0.68	4.52	5.38	2.02	1.61	13.52
4A421	2.54	1.29	0.91	4.73	4.91	2.02	1.57	13.23
Labrador	2.41	1.16	0.75	4.32	4.84	1.97	1.64	12.77
Mountaineer 2.0	2.36	1.11	0.73	4.19	4.63	1.99	1.68	12.49
54V46	2.36	1.24	0.74	4.33	4.84	1.96	1.32	12.46
Rebound 5.0	2.39	1.02	0.70	4.10	4.54	1.83	1.55	12.02
WL 335HQ	2.51	1.01	0.66	4.17	4.72	1.80	1.23	11.92
Vernal	2.43	0.94	0.58	3.95	4.45	1.72	1.73	11.85
LegenDairy 5.0	2.31	1.07	0.67	4.05	4.32	1.79	1.43	11.58
Integrity	2.45	1.11	0.64	4.19	4.28	1.83	1.22	11.52
Average	2.44	1.15	0.71	4.30	4.79	1.94	1.51	12.54
Maturity (Kalu & Fick)	4.6	4.1	5.1					
LSD (P=0.10)	NS	NS	NS	NS	NS	NS	NS	NS
CV (%)	10.1	22.9	26.3	14.5	15.7	17.7	27.9	13.6
P-value	0.7805	0.1909	0.2865	0.5416	0.1390	0.3560	0.4660	0.2746

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 26 April 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2008				2007	2-year
	12-Jun	9-Jul	14-Aug	Total	Total	Total
	Tons DM/acre					
Genoa	3.15	2.23	2.04	7.42	1.58	8.99
Lander	3.08	2.18	1.87	7.12	1.50	8.63
6417	2.92	2.14	1.92	6.98	1.60	8.58
Phirst	3.21	2.12	1.77	7.11	1.43	8.53
FSG 408DP	3.13	2.01	1.87	7.02	1.32	8.34
FSG 351	2.96	2.03	1.66	6.65	1.50	8.15
Vernal	3.07	1.87	1.71	6.65	1.41	8.06
WL 343HQ	2.85	1.89	1.81	6.55	1.37	7.92
6200HT	2.84	1.95	1.61	6.39	1.47	7.85
Average	3.02	2.05	1.81	6.87	1.40	8.34
Maturity (Kalu & Fick)	4.3	4.1	5.2		5.2	
LSD (P=0.10)	NS	NS	NS	NS	NS	NS
CV (%)	10.0	11.6	14.7	10.1	13.4	9.6
P-value	0.3241	0.1186	0.1606	0.2336	0.2600	0.2583

NS = not significant at 0.10 level of probability

Treflan applied pre-planting

50 lbs P2O5/Acre - preplant

ARCHIVE

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 27 April 2007

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2008				2007	2-year
	21-Jun	23-Jul	26 Aug.	Total	Total	Total
	Tons DM/acre					
AmeriStand 407 TQ	3.71	4.06	2.31	10.07	5.04	15.11
6417	3.91	3.82	2.67	10.41	4.69	15.09
54V09	3.89	3.56	2.42	9.87	4.73	14.59
WL 343HQ	3.51	3.48	2.50	9.49	4.92	14.41
Phirst	3.67	3.56	2.31	9.54	4.68	14.22
55V48	3.49	3.70	2.35	9.54	4.56	14.10
TS4027	3.67	3.83	2.43	9.92	4.11	14.03
Lander	3.71	3.80	2.30	9.81	4.13	13.93
520 BR	3.46	3.62	2.34	9.41	3.91	13.32
FSG 5285F	3.45	3.79	2.13	9.36	3.93	13.29
TS4007	3.48	3.92	2.02	9.42	3.82	13.23
Vernal	2.59	2.28	1.21	6.07	2.35	8.43
Average	3.54	3.62	2.25	9.41	4.24	13.65
Maturity (Kalu & Fick)	4.3	4.1	5.2			
LSD (P=0.10)	0.41	0.46	0.46	0.84	0.80	1.24
CV (%)	9.7	10.6	17.0	7.4	16.1	7.6
P-value	0.0010	<0.0001	0.0018	<0.0001	0.0003	<0.0001

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 1 May 2006

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2008				2007	2-year
	17-Jun	22-Jul	19-Aug	Total	Total	Total
	Tons DM/A					
WL 343	1.02	2.07	1.30	4.38	6.07	10.45
6443 RR	1.10	2.01	1.27	4.38	5.44	9.81
Melton	1.11	1.94	1.19	4.24	5.46	9.70
DKA 41-18RR	1.27	1.95	1.27	4.48	5.11	9.59
Genoa	1.38	1.59	1.12	4.09	5.44	9.52
54V46	1.04	1.82	1.21	4.07	5.31	9.38
DKA 34-17RR	1.17	1.78	1.15	4.10	5.25	9.34
Shaw	1.04	1.76	1.20	3.99	5.33	9.33
Vernal	1.04	1.61	1.09	3.74	5.54	9.28
53Q30	1.10	1.68	1.20	3.98	5.27	9.25
Mustang 420	1.11	1.81	1.20	4.11	5.14	9.25
6400 HT	0.76	1.66	1.10	3.51	5.42	8.94
Average	1.09	1.80	1.19	4.09	5.40	9.49
Maturity (Kalu & Fick)	5.5	4.8	4.3			
LSD (P=0.10)	NS	NS	NS	NS	NS	NS
CV (%)	31.6	19.7	14.2	14.5	13.0	12.7
P-value	0.3689	0.3262	0.4921	0.2628	0.6858	0.8201

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

Treflan applied preplant

2009 South Dakota Alfalfa Variety Trials
Vance N. Owens and Chris Lee
South Dakota State University

Establishment and Management

Alfalfa was planted at a rate of 18 lbs PLS acre⁻¹. Plots were 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Vale where plots were 3 feet wide and 20 feet long and consisted of 5 rows with 6-inch spacings. Six replicates were planted at each location except at Vale where four replicates were planted. Five replicates are used for calculating yields at the Brookings 2006 trial due to loss of one rep. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides were used as needed to successfully establish and manage alfalfa pests. Soil fertility was maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2006' is the trial planted near Brookings in 2006. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	No. of cuttings
Brookings (SD Crop Improvement Farm; Irrigated)	2006	4
Brookings (SD Crop Improvement Farm; Irrigated)	2008	4
Beresford (Southeast Research Station; Dryland)	2007	4
Beresford (Southeast Research Station; Dryland)	2009	1
Highmore (Central Research Station; Dryland)	2007	2*
Vale (Keith Dunn Farm; Irrigated)	2007	3
Watertown (Northeast Research Station; Dryland)	2006	2
Watertown (Northeast Research Station; Dryland)	2008	3

* The third growth cycle was inadvertently cut by a local cooperator; hence no data is included for cut 3.

2009 Results

New trials were planted near at Beresford and Vale, SD. Vale is an irrigated trial and Beresford is a dryland trial. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Late spring moisture delayed first cutting beyond the normal time at all locations. Yields were very good at all locations in 2009.

Contact Information

If you have any questions about this report please contact Vance Owens.

office phone: 605-688-6088

FAX: 605 688-4452

email: Vance.Owens@sdstate.edu

mailing address:

Plant Science Department

South Dakota State University

NPB 247, Box 2140-C

Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 29 April 2006

Experimental Design: Randomized complete block with five replicates

Irrigated Trial

Entry	2009					2008	2007	2006	4-year
	2-Jun	2-Jul	30-Jul	3-Sep	Total	Total	Total	Total	Total
	Tons DM/Acre								
6415	2.03	1.52	1.87	0.91	6.33	4.96	5.94	4.06	21.28
54V46	2.01	1.52	1.61	0.85	5.99	4.74	5.91	3.97	20.60
Genoa	1.96	1.65	1.68	0.94	6.23	4.88	5.53	3.78	20.43
DKA 41-18RR	1.90	1.46	1.83	0.80	5.99	4.78	5.81	3.82	20.40
TS 4027	1.94	1.39	1.49	0.72	5.53	4.78	5.99	4.03	20.33
WL 355	1.76	1.48	1.77	0.92	5.94	4.78	5.82	3.79	20.33
4A421	1.86	1.43	1.57	0.75	5.60	4.86	5.78	4.05	20.30
Bob White	1.91	1.54	1.65	0.83	5.92	4.82	5.46	3.95	20.15
WL 343	1.93	1.46	1.63	0.73	5.76	4.93	5.81	3.59	20.09
A4440	1.97	1.39	1.61	0.69	5.66	4.86	5.69	3.66	19.86
Meadowlark	1.90	1.45	1.54	0.79	5.68	4.62	5.48	4.00	19.79
6443 RR	1.87	1.57	1.74	0.89	6.07	4.72	5.06	3.90	19.74
4G418 RR	1.82	1.47	1.59	0.91	5.79	4.52	5.66	3.77	19.74
DKA 34-17RR	1.80	1.36	1.64	0.75	5.56	4.68	5.47	3.78	19.48
53Q30	1.80	1.33	1.56	0.68	5.38	4.54	5.56	3.88	19.36
Mustang 420	1.70	1.25	1.44	0.60	4.98	4.49	5.70	4.06	19.24
Oriole	1.79	1.33	1.36	0.65	5.12	4.44	5.54	3.95	19.05
Melton	1.82	1.20	1.25	0.61	4.88	4.37	5.24	3.87	18.36
Vernal	1.60	1.24	1.21	0.73	4.77	3.89	5.09	3.71	17.46
Shaw	1.58	1.22	1.28	0.62	4.70	3.83	4.98	3.73	17.25
Blue Bird HR	1.73	1.19	1.20	0.66	4.78	3.78	4.66	3.74	16.97
Average	1.84	1.40	1.55	0.76	5.56	4.58	5.53	3.86	19.53
Maturity (Kalu & Fick)	4.2	4.2	4.1	4.1					
LSD (P=0.10)	NS	0.16	0.19	0.14	0.45	0.30	0.37	NS	0.96
CV (%)	12.2	11.4	12.9	18.4	8.3	6.8	6.4	7.3	5.1
P-value	0.106	<0.0001	<0.0001	<0.001	<0.0001	<0.0001	<0.0001	0.261	<0.0001

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Irrigated Trial

Entry	2009				
	2-Jun	2-Jul	29-Jul	3-Sep	Total
	Tons DM/Acre				
Mustang 420+	1.65	1.15	1.05	0.60	4.45
DKA 43-13	1.54	1.08	1.19	0.64	4.44
Mustang 520BR	1.51	1.09	1.12	0.69	4.41
Garst 6415	1.49	1.01	1.13	0.59	4.23
WL 363HQ	1.48	0.99	1.04	0.54	4.05
Amerstand 407TQ	1.40	0.96	1.11	0.57	4.04
Garst 6417	1.45	1.05	0.97	0.50	3.98
Vernal	1.46	0.96	1.02	0.54	3.97
Pioneer 54V09	1.40	0.95	1.04	0.58	3.96
Pioneer 55V48	1.45	0.93	1.06	0.52	3.96
Rebound 5.0	1.32	0.93	1.07	0.63	3.94
LegendDairy 5.0	1.43	0.95	1.04	0.48	3.90
Average	1.46	1.00	1.07	0.57	4.11
Maturity (Kalu & Fick)	4.0	4.2	4.2	4.1	
LSD (P=0.10)	NS	NS	NS	NS	NS
CV (%)	11.2	17.4	13.8	25.7	12
P-value	0.181	0.378	0.491	0.417	0.376

NS = not significant at 0.10 level of probability

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Variety	2009					2008	2-year
	26-May	23-Jun	24-Jul	21-Aug	Total	Total	Total
	Tons DM/A						
Spring Gold	1.59	3.03	2.21	1.54	8.37	9.38	17.75
FSG 528SF	1.63	2.95	2.26	1.57	8.41	9.29	17.69
Ameristand 407TQ	1.57	2.77	2.26	1.43	8.02	9.49	17.50
Vernal	1.54	2.95	2.22	1.52	8.23	9.01	17.24
6417	1.67	2.77	2.18	1.44	8.06	9.05	17.12
WL 343HQ	1.58	2.78	2.19	1.48	8.03	9.07	17.10
55V48	1.57	2.82	2.13	1.50	8.02	9.05	17.07
FSG 400LH	1.55	2.64	2.11	1.41	7.71	9.00	16.71
Average	1.59	2.84	2.19	1.49	8.10	9.17	17.27
Maturity (Kalu & Fick)	4.2	4.1	4.2	4.1			
LSD (P=0.10)	NS	NS	NS	NS	NS	NS	NS
CV (%)	9.8	10.8	9.4	11.8	8.6	8.2	6.4
P-value	0.8460	0.4020	0.8640	0.701	0.719	0.9260	0.764

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2009

Experimental Design: Randomized complete block with six replicates

Dryland Trial

<u>Variety</u>	<u>24-Jul</u>
	Tons DM/A
FSG 329	3.82
Ameristand 403T plus	3.74
Mycogen 4S417	3.56
FSG 429 SN	3.51
53H92	3.50
Rebound 5.0	3.45
55V48	3.44
Syngenta 6422Q	3.39
LegendDairy 5.0	3.33
WL 363HQ	3.32
Ameristand 407 TQ	3.30
Vernal	3.30
DKA 43-13	3.22
Average	3.45
Maturity (Kalu & Fick)	4.8
LSD (P=0.10)	NS
CV (%)	11.3
P-value	0.2880

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 26 April 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2009			2008	2007	3-year
	4-Jun	1-Jul	Total ¹	Total	Total	Total
	Tons DM/acre					
Genoa	2.09	0.87	2.97	7.42	1.58	11.96
Lander	1.82	0.66	2.48	7.12	1.50	11.11
Phirst	1.91	0.60	2.50	7.11	1.43	11.04
6417	1.69	0.52	2.22	6.98	1.60	10.80
FSG 408DP	1.76	0.54	2.29	7.02	1.32	10.63
FSG 351	1.81	0.56	2.37	6.65	1.50	10.51
Vernal	1.87	0.55	2.42	6.65	1.41	10.48
WL 343HQ	1.68	0.62	2.30	6.55	1.37	10.21
6200HT	1.59	0.37	1.96	6.39	1.47	9.81
Average	1.80	0.59	2.39	6.87	1.46	10.73
Maturity (Kalu & Fick)	5.1	4.8			5.2	
LSD (P=0.10)	NS	NS	NS	NS	NS	NS
CV (%)	25.0	49.0	31.0	10.0	13.7	11.7
P-value	0.736	0.326	0.598	0.234	0.290	0.227

NS = not significant at 0.10 level of probability

Treflan applied pre-planting

50 lbs P2O5/Acre - preplant

¹ Third growth alfalfa was inadvertently cut off by producer; thus no measurements were taken.

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 27 April 2007

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2009				2008	2007	3-year
	3-Jun	8-Jul	8-Aug	Total	Total	Total	Total
	Tons DM/acre						
6417	3.58	2.74	2.03	8.34	10.41	4.69	23.43
AmeriStand 407 TQ	2.92	2.79	1.96	7.68	10.07	5.04	22.78
WL 343HQ	3.26	2.60	1.90	7.76	9.49	4.92	22.17
54V09	3.00	2.61	1.91	7.52	9.87	4.73	22.10
TS4027	3.44	2.64	1.87	7.94	9.92	4.11	21.97
55V48	3.09	2.58	1.89	7.55	9.54	4.56	21.65
Phirst	2.82	2.39	1.93	7.13	9.54	4.68	21.35
Lander	2.96	2.43	1.93	7.31	9.81	4.13	21.24
FSG 5285F	2.81	2.43	2.02	7.25	9.36	3.93	20.54
520 BR	2.85	2.37	1.88	7.09	9.41	3.91	20.41
TS4007	2.82	2.19	1.95	6.96	9.42	3.82	20.18
Vernal	2.01	1.83	1.26	5.09	6.07	2.35	13.52
Average	2.96	2.46	1.87	7.30	9.41	4.24	20.95
Maturity (Kalu & Fick)	3.8	4.0	4.4				
LSD (P=0.10)	0.24	0.22	0.31	0.50	0.84	0.80	1.40
CV (%)	6.8	7.4	14.0	5.7	7.4	16.1	5.6
P-value	< 0.001	< 0.001	0.026	< 0.001	< 0.001	< 0.001	< 0.001

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 1 May 2006

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2009		2008 Total	2007 Total	3-year Total
	12-Jun	15-Jul			
	Tons DM/A				
WL 343	0.96	1.28	2.24	4.38	12.68
6443 RR	1.16	1.35	2.51	4.38	12.32
Melton	0.90	1.24	2.14	4.24	11.83
Genoa	1.07	1.19	2.26	4.09	11.78
DKA 41-18RR	1.03	1.14	2.18	4.48	11.76
DKA 34-17RR	1.00	1.19	2.18	4.10	11.52
53Q30	0.99	1.16	2.15	3.98	11.41
54V46	0.90	0.95	1.86	4.07	11.23
Shaw	0.85	1.05	1.89	3.99	11.22
Mustang 420	0.83	1.11	1.94	4.11	11.19
Vernal	0.58	0.93	1.51	3.74	10.79
6400 HT	0.72	1.00	1.72	3.51	10.66
Average	0.92	1.13	2.05	4.09	11.53
Maturity (Kalu & Fick)	5.1	4.4			
LSD (P=0.10)	0.24	0.21	0.41	NS	NS
CV (%)	26.6	19.5	20.5	14.5	12.7
P-value	0.012	0.035	0.013	0.263	0.485

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

Treflan applied preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2009			
	12-Jun	15-Jul	10-Aug	Total
		Tons DM/A		
Producers A4330	1.76	1.68	1.39	4.84
Rebound 5.0	1.67	1.67	1.25	4.59
LegendDairy 5.0	1.55	1.67	1.30	4.51
54V09	1.64	1.62	1.06	4.31
Ameristand 407TQ	1.54	1.48	1.21	4.23
DKA 43-13	1.28	1.55	1.20	4.03
Garst 6417	1.34	1.42	1.06	3.82
WL 343HQ	1.23	1.41	1.08	3.71
55V48	1.29	1.36	1.03	3.68
Vernal	1.33	1.44	0.72	3.49
Average	1.46	1.53	1.13	4.12
Maturity (Kalu & Fick)	4.6	4.8	4.4	
LSD (P=0.10)	0.31	NS	0.20	0.67
CV (%)	22.2	16.7	18.1	16.8
P-value	0.050	0.224	< 0.001	0.021

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

2010 South Dakota Alfalfa Variety Trials
Vance N. Owens and Chris Lee
South Dakota State University

Establishment and Management

Alfalfa was planted at a rate of 18 lbs PLS acre⁻¹. Plots were 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Vale where plots were 3 feet wide and 20 feet long and consisted of 5 rows with 6-inch spacings. Six replicates were planted at each location except at Vale where four replicates were planted. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides were used as needed to successfully establish and manage alfalfa pests. Soil fertility was maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2010' is the trial planted near Brookings in 2010. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	2010
		No. of cuttings
Brookings (SD Crop Improvement Farm; Irrigated)	2008	4
Brookings (Felt Farm; Dryland)	2010	1
Beresford (Southeast Research Station; Dryland)	2007	4
Beresford (Southeast Research Station; Dryland)	2009	4
Highmore (Central Research Station; Dryland)	2007	3
Vale (Keith Dunn Farm; Irrigated)	2007	3
Vale (Keith Dunn Farm; Irrigated)	2009	3
Watertown (Northeast Research Station; Dryland)	2008	3

2010 Results

New trials were planted Brookings and Watertown, SD. Both are being managed as dryland trial. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Late spring moisture delayed first cutting beyond the normal time at all locations. Yields were very good at all locations in 2010.

Contact Information

If you have any questions about this report please contact Vance Owens or Chris Lee.

office phone: 605-688-4501

FAX: 605 688-4452

email: Vance.Owens@sdstate.edu and Christopher.lee@sdstate.edu

mailing address:

Plant Science Department

South Dakota State University

NPB 247, Box 2140-C

Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Irrigated Trial

Entry	2010					2009	2-Year
	26-May	30-Jun	30-Jul	13-Sep	Total	Total	Total
	Tons DM/Acre						
Mustang 420+	2.22	2.54	1.19	1.13	7.07	4.45	11.52
DKA 43-13	2.01	2.53	1.30	1.03	6.88	4.44	11.32
Mustang 520BR	2.04	2.48	1.09	1.00	6.60	4.41	11.01
Garst 6415	1.99	2.54	1.21	1.01	6.74	4.23	10.97
LegendDairy 5.0	2.19	2.55	1.25	1.03	7.02	3.90	10.92
WL 363HQ	1.90	2.54	1.31	1.06	6.81	4.05	10.86
Garst 6417	2.10	2.51	1.22	1.00	6.83	3.98	10.81
Pioneer 55V48	1.96	2.47	1.23	0.99	6.65	3.96	10.60
Amerstand 407TQ	1.93	2.35	1.15	0.93	6.36	4.04	10.39
Pioneer 54V09	1.77	2.39	1.11	0.91	6.18	3.96	10.14
Rebound 5.0	1.87	2.30	1.07	0.91	6.15	3.94	10.09
Vernal	1.75	2.17	1.01	0.94	5.88	3.97	9.85
Average	1.98	2.45	1.18	0.99	6.60	4.11	10.7
Maturity (Kalu & Fick)	4.8	5.3	4.8	4.9			
LSD (P=0.10)	0.20	NS	0.13	NS	0.62	NS	0.93
CV (%)	10.5	10.7	7.6	16.1	9.6	12.0	8.9
P-value	0.003	0.266	0.006	0.457	0.035	0.376	0.100

NS = not significant at 0.10 level of probability

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; Felt Farm; Brookings County

Planting Date: 10 May 2010

Experimental Design: Randomized complete block with six replicates

Dryland Trial

<u>Entry</u>	<u>2-Aug.</u>
	Tons DM/Acre
DKA43-13	2.62
Pioneer 54Q32	2.41
Pioneer 55V48	2.68
Pioneer 55V50	2.60
PGI 427	2.48
TS 4007	2.59
Syngenta 6305Q	2.58
Syngenta 6422Q	2.43
Vernal	2.56
WL 343 HQ	2.59
Average	2.55
Maturity (Kalu & Fick)	4.9
LSD (P=0.10)	NS
CV (%)	10.4
P-value	0.752

NS = not significant at 0.10 level of probability

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Variety	2010					2009	2008	3-year
	26-May	30-Jun	8-Aug	17-Sep	Total	Total	Total	Total
	Tons DM/A							
Spring Gold	2.80	3.33	1.37	1.20	8.69	8.37	9.38	26.44
Ameristand 407TQ	2.70	3.20	1.31	1.21	8.42	8.02	9.49	25.92
FSG 528SF	2.62	2.97	1.30	1.22	8.13	8.41	9.29	25.82
Pioneer 55V48	2.46	3.36	1.28	1.14	8.23	8.02	9.05	25.30
Vernal	2.59	3.10	1.18	1.13	7.99	8.23	9.01	25.23
6417	2.60	3.02	1.30	1.16	8.08	8.06	9.05	25.20
WL 343HQ	2.59	3.05	1.26	1.15	8.04	8.03	9.07	25.15
FSG 400LH	2.52	3.03	1.17	1.11	7.82	7.71	9.00	24.53
Average	2.61	3.13	1.27	1.16	8.18	8.10	9.17	25.45
Maturity (Kalu & Fick)	4.7	5.7	5.2	5.1				
LSD (P=0.10)	NS	NS	NS	NS	NS	NS	NS	NS
CV (%)	15.1	13.0	12.6	12.0	9.9	8.6	8.2	7.2
P-value	0.8790	0.6100	0.3910	0.782	0.693	0.719	0.9260	0.732

NS = not significant at 0.10 level of probability

Treflan applied before planting

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2009

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Variety	2010					2009	2-year
	26-May	30-Jun	8-Aug	17-Sep	Total	Total	Total
	Tons DM/A						
Mycogen 4S417	3.13	3.64	2.46	1.59	10.81	3.56	14.37
FSG 329	3.01	3.31	2.46	1.53	10.31	3.82	14.13
Pioneer 55V48	3.06	3.50	2.47	1.59	10.62	3.44	14.06
Ameristand 403T plus	2.92	3.55	2.35	1.43	10.25	3.74	13.99
WL 363HQ	3.02	3.42	2.55	1.62	10.60	3.32	13.91
Ameristand 407 TQ	2.99	3.37	2.55	1.65	10.55	3.30	13.85
Syngenta 6422Q	2.84	3.28	2.53	1.56	10.22	3.39	13.61
DKA 43-13	2.91	3.17	2.56	1.72	10.35	3.22	13.57
LegendDairy 5.0	3.00	3.29	2.42	1.51	10.21	3.33	13.54
Rebound 5.0	2.84	3.44	2.37	1.42	10.07	3.45	13.52
Pioneer 53H92	2.89	3.24	2.50	1.39	10.02	3.50	13.52
FSG 429 SN	2.56	3.37	2.46	1.46	9.85	3.51	13.36
Vernal	2.85	3.40	2.41	1.40	10.05	3.30	13.34
Average	2.92	3.38	2.47	1.53	10.30	3.45	13.75
Maturity (Kalu & Fick)	5.0	5.6	5.1	4.9		4.8	
LSD (P=0.10)	NS	0.22	NS	0.11	NS	NS	NS
CV (%)	10.7	6.7	9.4	7.7	5.7	11.3	4.9
P-value	0.288	0.037	0.899	0.001	0.209	0.288	0.198

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 26 April 2007

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2010			2009		2008	2007	4-year
	28-May	29-Jun	30-Jul	Total	Total	Total	Total	Total
	Tons DM/acre							
Genoa	2.40	3.47	1.79	7.66	2.97	7.42	1.58	19.61
Lander	2.73	3.34	1.70	7.78	2.48	7.12	1.50	18.88
Phirst	2.64	3.36	1.72	7.72	2.50	7.11	1.43	18.75
6417	2.71	3.30	1.66	7.66	2.22	6.98	1.60	18.46
FSG 408DP	2.72	3.38	1.59	7.69	2.29	7.02	1.32	18.32
FSG 351	2.66	3.33	1.68	7.67	2.37	6.65	1.50	18.18
Vernal	2.62	3.26	1.50	7.37	2.42	6.65	1.41	17.85
WL 343HQ	2.53	3.26	1.69	7.48	2.30	6.55	1.37	17.69
6200HT	2.66	3.30	1.62	7.58	1.96	6.39	1.47	17.39
Average	2.63	3.33	1.66	7.62	2.39	6.87	1.46	18.35
Maturity (Kalu & Fick)	4.9	5.7	5.1					
LSD (P=0.10)	NS	NS	NS	NS	NS	NS	NS	NS
CV (%)	8.8	5.2	9.3	5.0	31.0	10.0	13.7	7.6
P-value	0.303	0.540	0.111	0.712	0.598	0.234	0.290	0.220

NS = not significant at 0.10 level of probability

Treflan applied pre-planting

50 lbs P2O5/Acre - preplant

In 2009 third growth alfalfa was inadvertently cut off by producer; thus no measurements were taken.

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 27 April 2007

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2010				2009	2008	2007	4-year
	2-Jun	20-Jul	27-Aug	Total	Total	Total	Total	Total
	Tons DM/acre							
520 BR	3.10	1.36	0.72	5.17	7.09	9.41	3.91	25.58
Pioneer 54V09	3.07	1.09	0.81	4.97	7.52	9.87	4.73	27.07
Pioneer 55V48	2.92	1.26	0.87	5.05	7.55	9.54	4.56	26.70
6417	3.45	1.75	1.14	6.33	8.34	10.41	4.69	29.76
AmeriStand 407 TQ	3.18	1.85	1.27	6.29	7.68	10.07	5.04	29.06
FSG 5285F	2.87	1.37	0.85	5.08	7.25	9.36	3.93	25.62
Lander	2.99	1.43	0.83	5.24	7.31	9.81	4.13	26.48
Phirst	3.04	1.61	0.84	5.49	7.13	9.54	4.68	26.84
TS4007	3.02	1.46	0.73	5.21	6.96	9.42	3.82	25.40
TS4027	3.31	1.67	0.89	5.88	7.94	9.92	4.11	27.85
Vernal	2.24	1.41	0.54	4.19	5.09	6.07	2.35	17.71
WL 343HQ	3.35	1.47	1.04	5.86	7.76	9.49	4.92	28.02
Average	3.04	1.48	0.88	5.39	7.30	9.41	4.24	26.34
Maturity (Kalu & Fick)	4.1	5.9	4.9					
LSD (P=0.10)	0.30	0.35	0.2	0.2	0.50	0.84	0.80	1.73
CV (%)	8.3	20.2	18.8	18.8	5.7	7.4	16.1	5.5
P-value	< 0.001	0.0570	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 21 May 2009

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2010			
	2-Jun	20-Jul	27-Aug	Total
	Tons DM/acre			
Ameristand 403T	2.52	2.12	1.51	6.15
Ameristand 407T	2.81	2.05	1.45	6.30
MS Sun EXP 802	2.77	1.98	1.55	6.29
MS Sun EXP 807	2.77	1.97	1.43	6.16
Mycogen 4S417	2.83	2.04	1.58	6.45
Pioneer 53H92	2.54	1.78	1.51	5.83
Pioneer 55V48	2.44	1.85	1.53	5.81
Syngenta 6422Q	2.72	2.11	1.87	6.69
Vernal	2.55	1.76	1.39	5.70
WL 363HQ	2.48	2.15	1.44	6.06
Average	2.64	1.98	1.52	6.14
Maturity (Kalu & Fick)	4.1	5.4	4.6	
LSD (P=0.10)	NS	NS	0.19	NS
CV (%)	11.4	14.1	10.3	9.6
P-value	0.473	0.459	0.016	0.406

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2010				2009	2-year
	16-Jun	15-Jul	12-Aug	Total	Total	Total
			Tons DM/A			
Rebound 5.0	1.33	1.26	0.80	3.39	4.59	7.98
Producers A4330	1.11	1.15	0.78	3.04	4.84	7.87
LegendDairy 5.0	0.98	1.20	0.67	2.86	4.51	7.37
Pionner 54V09	0.99	1.06	0.63	2.67	4.31	6.99
Ameristand 407TQ	0.99	1.06	0.71	2.76	4.23	6.98
DKA 43-13	1.03	1.08	0.75	2.86	4.03	6.88
WL 343HQ	0.99	1.09	0.65	2.73	3.71	6.44
Pioneer 55V48	1.00	1.03	0.64	2.66	3.68	6.34
Garst 6417	0.91	0.92	0.65	2.48	3.82	6.30
Vernal	0.98	1.05	0.58	2.61	3.49	6.10
Average	1.03	1.09	0.69	2.81	4.12	6.93
Maturity (Kalu & Fick)	4.5	5.5	4.9			
LSD (P=0.10)	NS	NS	0.10	NS	0.67	1.06
CV (%)	22.6	18.6	15.2	17.8	16.8	15.7
P-value	0.173	0.268	0.011	0.150	0.021	0.043

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

2011 South Dakota Alfalfa Variety Trials
Vance N. Owens, Chris Lee, and Matt Hansen
South Dakota State University

Establishment and Management

Alfalfa was planted at a rate of 18 lbs PLS acre⁻¹. Plots were 4 feet wide and 20 feet long and planted with a Brillion broadcast seeder, except at Vale where plots were 3 feet wide and 20 feet long and consisted of 5 rows with 6-inch spacings. Six replicates were planted at each location except at Vale where four replicates were planted. Stage of maturity for each trial was determined before harvest using the Kalu and Fick (1981, Crop Science 21:267-271) mean-stage-by-count method. Maturity information is included in the yield tables. A sickle-bar harvester was used to harvest all plots. Fresh alfalfa samples were randomly obtained during harvest and dried to determine yield on a dry matter basis. Herbicides and insecticides were used as needed to successfully establish and manage alfalfa pests. Soil fertility was maintained throughout the trial at levels recommended by the SDSU soil testing lab.

Worksheet Description

Each worksheet has a designated name detailing the location of the test and the year it was planted. For example the worksheet titled 'Brookings 2010' is the trial planted near Brookings in 2010. Yield is sorted in descending order based on the one-to-four year total. Included in this report are yield and cutting data for the following locations:

Location	Established	2011
		No. of cuttings
Brookings (SD Crop Improvement Farm; Irrigated)	2008	4
Brookings (Felt Farm; Dryland)	2010	4
Beresford (Southeast Research Station; Dryland)	2009	4
Highmore (Central Research Station; Dryland)	2010	3
Vale (Keith Dunn Farm; Irrigated)	2009	3
Watertown (Northeast Research Station; Dryland)	2008	3
Watertown (Northeast Research Station; Dryland)	2010	3

2011 Results

New trials were planted Brookings and Beresford, SD. Both are being managed as dryland trial. Yields for each location are listed in tons dry matter/acre. Released cultivars are listed first followed by experimental entries (when present).

Late spring moisture delayed first cutting beyond the normal time at all locations. Yields were very good at all locations in 2011.

Contact Information

If you have any questions about this report please contact Vance Owens or Chris Lee.

Office phone: 605-688-6088

Lab phone: 605-688-4501

FAX: 605 688-4452

email: Vance.Owens@sdstate.edu; Christopher.lee@sdstate.edu

mailing address:

Plant Science Department

South Dakota State University

NPB 248B, Box 2140-C

Brookings, SD 57007

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; South Dakota Crop Improvement Research Farm; Brookings County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Irrigated Trial

Entry	2011					2010	2009	3-Year
	6-Jun	6-Jul	1-Aug	7-Sep	Total	Total	Total	Total
	Tons DM/Acre							
Mustang 420+	1.66	0.87	0.99	0.64	4.17	7.07	4.45	15.69
DKA 43-13	1.69	0.75	1.02	0.71	4.17	6.88	4.44	15.49
Mustang 520BR	1.81	0.74	0.97	0.62	4.14	6.60	4.41	15.15
Garst 6415	1.66	0.80	0.96	0.63	4.05	6.74	4.23	15.01
LegendDairy 5.0	1.68	0.83	0.98	0.56	4.06	7.02	3.90	14.97
WL 363HQ	1.67	0.76	0.99	0.69	4.10	6.81	4.05	14.96
Garst 6417	1.64	0.83	0.94	0.62	4.03	6.83	3.98	14.83
Pioneer 55V48	1.53	0.73	0.89	0.70	3.84	6.65	3.96	14.44
Amerstand 407TQ	1.36	0.78	0.94	0.71	3.79	6.36	4.04	14.19
Rebound 5.0	1.38	0.85	0.86	0.65	3.74	6.15	3.94	13.83
Pioneer 54V09	1.46	0.75	0.86	0.62	3.68	6.18	3.96	13.83
Vernal	1.44	0.84	0.80	0.60	3.68	5.88	3.97	13.53
Average	1.58	0.79	0.93	0.64	3.95	6.60	4.11	14.66
Maturity (Kalu & Fick)	4.9	5.1	5.1	4.4				
LSD (P=0.10)	NS	0.09	0.11	NS	NS	0.62	NS	NS
CV (%)	18.1	11.5	12.2	30.0	12.9	9.6	12.0	9.5
P-value	0.168	0.086	0.043	0.961	0.593	0.035	0.376	0.161

NS = not significant at 0.10 level of probability

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Brookings, SD; Felt Farm; Brookings County

Planting Date: 10 May 2010

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2011					2010	2 Year
	6-Jun	6-Jul	7-Aug	8-Sep	Total	Total	Total
	Tons DM/Acre						
DKA43-13	3.45	1.38	1.11	0.96	6.89	2.62	9.50
Pioneer 55V48	3.25	1.38	1.00	0.86	6.49	2.68	9.18
Pioneer 55V50	3.52	1.22	0.94	0.87	6.56	2.60	9.16
TS 4007	3.28	1.33	1.03	0.89	6.53	2.59	9.12
Syngenta 6422Q	3.37	1.16	1.13	0.93	6.60	2.43	9.02
Pioneer 54Q32	3.36	1.26	1.06	0.86	6.53	2.41	8.95
WL 343 HQ	2.74	1.49	0.98	0.83	6.04	2.59	8.64
Syngenta 6305Q	3.09	1.09	0.99	0.84	6.02	2.58	8.60
Vernal	2.99	1.31	0.84	0.76	5.90	2.56	8.45
PGI 427	2.97	1.28	0.93	0.73	5.91	2.48	8.39
Average	3.20	1.29	1.00	0.85	6.35	2.55	8.90
Maturity (Kalu & Fick)	4.8	5.4	5.4	4.5			
LSD (P=0.10)	0.3	0.16	0.11	NS	0.48	NS	0.98
CV (%)	9.8	13.1	11.0	12.2	7.8	10.4	6.5
P-value	0.001	0.009	0.002	0.523	0.008	0.752	0.021

NS = not significant at 0.10 level of probability

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Beresford, SD; SDSU Southeast Research Farm; Clay County

Planting Date: 4 May 2009

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Variety	2011					2010	2009	3-year
	9-Jun	8-Jul	10-Aug	9-Sep	Total	Total	Total	Total
	Tons DM/A							
Mycogen 4S417	1.95	1.59	1.55	0.84	5.94	10.81	3.56	20.30
FSG 329	1.86	1.49	1.79	0.91	6.06	10.31	3.82	20.20
WL 363HQ	1.97	1.65	1.81	0.94	6.37	10.60	3.32	20.29
Pioneer 55V48	1.90	1.67	1.63	0.90	6.11	10.62	3.44	20.16
DKA 43-13	1.91	1.53	2.05	1.11	6.59	10.35	3.22	20.15
Ameristand 407 TQ	1.87	1.65	1.72	0.98	6.22	10.55	3.30	20.07
Syngenta 6422Q	1.83	1.60	1.88	0.94	6.25	10.22	3.39	19.86
Ameristand 403T plus	1.78	1.64	1.53	0.79	5.75	10.25	3.74	19.73
LegendDairy 5.0	1.77	1.52	1.70	0.90	5.90	10.21	3.33	19.44
Pioneer 53H92	1.90	1.61	1.42	0.79	5.72	10.02	3.50	19.23
Rebound 5.0	1.89	1.55	1.48	0.79	5.71	10.07	3.45	19.23
FSG 429 SN	1.80	1.57	1.39	0.79	5.55	9.85	3.51	18.91
Vernal	1.83	1.65	1.33	0.74	5.55	10.05	3.30	18.89
Average	1.87	1.59	1.64	0.88	5.98	10.30	3.45	19.73
Maturity (Kalu & Fick)	5.6	5.6	6.1	4.1				
LSD (P=0.10)	NS	NS	0.2	0.15	0.4	NS	NS	0.94
CV (%)	6.9	11.1	13.0	17.9	7.0	5.7	11.3	4.9
P-value	0.214	0.778	0.0001	0.008	0.0005	0.209	0.288	0.078

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Highmore, SD; SDSU Central Research Farm; Hyde County

Planting Date: 11 May 2010

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2011			Total
	18-Jun	22-Jul	23-Aug	
	Tons DM/acre			
Pioneer 55V50	2.51	2.17	2.33	7.02
Pioneer 55V48	2.76	1.84	2.10	6.70
Vernal	2.82	1.72	1.98	6.52
Syngenta 6305Q	2.61	1.96	1.88	6.45
Producers TS 4007	2.58	1.84	1.95	6.36
Monsanto DKA 43-13	2.65	1.62	1.84	6.11
Syngenta 6422Q	2.49	1.67	1.81	5.97
Producers PGI 427	2.53	1.68	1.76	5.97
Pioneer 54Q32	2.67	1.60	1.64	5.91
WL 343 HQ	2.42	1.49	1.70	5.62
Average	2.60	1.76	1.90	6.26
Maturity (Kalu & Fick)	5.8	5.8	4.6	
LSD (P=0.10)	NS	0.16	0.19	0.89
CV (%)	14.1	17.6	17.6	11.6
P-value	0.655	0.006	0.025	0.048

NS = not significant at 0.10 level of probability

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SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Vale, SD; Keith Dunn Farm; Butte County

Planting Date: 21 May 2009

Experimental Design: Randomized complete block with four replicates

Irrigated Trial

Entry	2011				2010	2-Year
	14-Jun	21-Jul	14-Aug	Total	Total	Total
	Tons DM/acre					
Syngenta 6422Q	3.15	2.14	0.92	6.21	6.69	12.90
Mycogen 4S417	3.38	2.11	0.92	6.40	6.45	12.85
Ameristand 403T	3.64	1.96	0.91	6.52	6.15	12.67
MS Sun EXP 807	3.26	2.14	0.94	6.34	6.16	12.50
WL 363HQ	3.50	1.89	0.87	6.27	6.06	12.33
Ameristand 407T	2.91	2.10	1.01	6.02	6.30	12.33
MS Sun EXP 802	2.98	1.97	1.00	5.95	6.29	12.24
Pioneer 53H92	3.57	1.91	0.85	6.32	5.83	12.15
Pioneer 55V48	3.38	1.99	0.84	6.22	5.81	12.03
Vernal	3.06	1.89	0.86	5.81	5.70	11.50
Average	3.28	2.01	0.91	6.21	6.14	12.35
Maturity (Kalu & Fick)	4.0	5.8	4.0			
LSD (P=0.10)	NS	0.2	0.1	0.73	NS	1.27
CV (%)	14.9	8.3	8.9	9.7	9.6	8.5
P-value	0.33	0.0002	0.0001	0.036	0.406	0.077

NS = not significant at 0.10 level of probability

Pursuit applied after germination

50 lbs P2O5 incorporated before planting

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 6 May 2008

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2011				2010 Total	2009 Total	3-year Total
	16-Jun	2-Jul	22-Aug	Total			
	Tons DM/A						
Rebound 5.0	1.00	1.06	0.73	2.78	3.39	4.59	10.77
Producers A4330	0.98	1.02	0.71	2.71	3.04	4.84	10.59
LegendDairy 5.0	1.07	1.14	0.72	2.92	2.86	4.51	10.29
Ameristand 407TQ	0.96	0.95	0.74	2.65	2.76	4.23	9.64
DKA 43-13	1.01	0.99	0.74	2.74	2.86	4.03	9.62
Pionner 54V09	1.09	0.89	0.63	2.60	2.67	4.31	9.58
Pioneer 55V48	1.21	0.93	0.67	2.81	2.66	3.68	9.15
WL 343HQ	0.98	0.92	0.64	2.53	2.73	3.71	8.97
Garst 6417	1.09	0.77	0.60	2.46	2.48	3.82	8.76
Vernal	0.90	0.68	0.49	2.08	2.61	3.49	8.17
Average	1.03	0.92	0.66	2.61	2.81	4.12	9.55
Maturity (Kalu & Fick)	5.2	5.6	4.9				
LSD (P=0.10)	NS	0.18	0.1	0.28	NS	0.67	1.06
CV (%)	20.9	19.4	15.1	10.9	17.8	16.8	15.7
P-value	0.461	0.004	0.002	0.001	0.150	0.021	0.043

NS = not significant at 0.10 level of probability

50 lbs P2O5/Acre - preplant

SOUTH DAKOTA ALFALFA VARIETY TRIAL

Location: Watertown, SD; SDSU Northeast Experiment Station; Codington County

Planting Date: 18 May 2010

Experimental Design: Randomized complete block with six replicates

Dryland Trial

Entry	2011			Total
	2-Jun	20-Jul	27-Aug	
	Tons DM/acre			
DKA 43-13	2.12	1.56	0.80	4.48
Pioneer 54Q32	2.14	1.48	0.69	4.30
Syngenta 6422Q	2.05	1.50	0.71	4.27
Pioneer 55V48	2.20	1.39	0.64	4.23
Pioneer 55V50	2.11	1.23	0.76	4.10
Producers PGI 427	2.17	1.26	0.66	4.10
Syngenta 6305Q	2.02	1.25	0.65	3.92
WL 343 HQ	1.83	1.36	0.61	3.80
Producers TS 4007	1.95	1.12	0.55	3.62
Vernal	2.06	0.49	0.39	2.94
Average	2.07	1.26	0.65	3.98
Maturity (Kalu & Fick)	5.0	5.3	5.9	
LSD (P=0.10)	NS	0.06	0.03	0.22
CV (%)	16.2	14.7	20.6	9.1
P-value	0.414	0.0001	0.006	0.0001

NS = not significant at 0.10 level of probability

Karla A. Hernandez | SDSU Extension Forages Field Specialist

Location: Watertown, SD (Northeast Research Farm)

Planting Date: May 21 2015

Experimental Design: Randomized Complete Block Design with three replications

Dryland Trial: Yield Results

Second and third year of production

2016 Yield Summary					
Entry	Planting Date (Tons DM/acre)				
	26-May	28-Jun	28-Jul	25-Aug	Total
Check (Phirst Extra)	2.67	2.79	2.85	1.63	2.49
Crave	2.15	2.65	2.82	1.98	2.4
Genuity	2.25	2.55	2.83	1.67	2.33
Persist II	2.3	2.3	2.82	1.87	2.32
Phirst Extra	2.43	2.64	2.86	2.05	2.5
Prolific I	2.06	2.84	2.8	1.82	2.38
Salinity Max	2.22	2.66	2.85	1.81	2.39
Toughmax	1.87	2.63	2.53	2.01	2.26
Average	2.24	2.63	2.8	1.86	2.38
LSD P=0.05	NS	NS	NS	NS	NS
CV (%)	16.35	10.3	6.36	14.32	11.83
P value	0.33	0.42	0.4	0.46	-

2017 Yield Summary					
Entry	Planting Date (Tons DM/acre)				
	31-May	6-Jul	7-Aug	14-Sep	Total
Check	2.67	2.63	2.41	2.51	2.56
Crave	2.31	2.17	1.84	1.99	2.08
Genuity	2.07	2.15	2.14	2.23	2.15
Persist II	2.34	2.17	2.26	1.71	2.12
Phirst Extra	2.54	1.63	1.76	2.33	2.07
Prolific I	1.73	1.94	1.99	1.84	1.88
Salinity Max	1.31	2	1.53	2.11	1.74
Toughmax	2.1	2.02	2.14	2.18	2.11
Average	2.13	2.09	2	2.11	2.08
LSD P=0.05	1.59	1.18	NS	NS	1.23
CV (%)	19.87	15.01	21.81	25.57	20.57
P value	0.02	0.07	0.32	0.68	-